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A Report to the  
Principal Deputy Assistant Secretary of Defense  
(Manpower, Reserve Affairs, and Logistics)

# HISTORY OF THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

1974-1980

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ASVAB WORKING GROUP  
MARCH 1980

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MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

10 MAR 1980

MEMORANDUM FOR PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE (MANPOWER,  
RESERVE AFFAIRS, AND LOGISTICS)

Through: The Director for Accession Policy (OASD/MRA&L)

SUBJECT: History of the Armed Services Vocational Aptitude Battery (ASVAB)

During the period 29 February 1980 through 7 March 1980, current and past members of the ASVAB Working Group developed the attached "History of the ASVAB." The content of this report is based on Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) memoranda, Service letters and memoranda, Service personnel research laboratory letters and R&D documentation, and personal recollections. Supporting reference materials have been included in appendices to the report.

Those of us who participated in the preparation of the report have signed below. Beneath our signature elements are the dates of our membership in the ASVAB Working Group. It should be noted that this report reflects our knowledge and experience and does not necessarily represent the official position of our respective Services.

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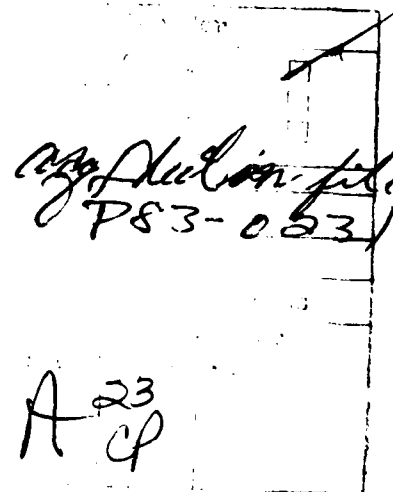
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Attachment



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## PREFACE

On February 19, 1980, and March 10, 1980, Mr. Robert B. Pirie, Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) presented the Department of Defense (DoD) Manpower Overview Statement to the House and Senate Armed Services Committees, respectively. In it, Mr. Pirie informed the Committees that he had learned that there are problems with the norms of the DoD enlistment eligibility test, the Armed Services Vocational Aptitude Battery (ASVAB).

Norms are simply conversion tables that tie a test's raw scores to some known reference population. Raw scores on a test are by themselves meaningless. They must be "normed" against the scores of a standardization sample. In the case of the ASVAB, the norms allow DoD to track the "mental ability" of its enlistments across time in order to determine the relative quality of new recruits. If the norms are inaccurately translating raw scores to standard scores, then DoD would not be able to evaluate the quality of its new recruits against the quality of those who had served in the past. For that reason, it is imperative that the test norms be accurate.

Since Mr. Pirie's testimony, there has been widespread interest in the ASVAB and its norms. This report presents the history of the test including discussions of its development, norming, and implementation. As will be seen, norming is a complex scientific problem and one which has received the attention of DoD psychologists over the last five years. At this time, there is still uncertainty regarding the "true" norms. However, recognizing the serious implications the norming problem has for military manpower management, DoD has taken aggressive action to resolve it. Norming data are currently being collected both by Service personnel research laboratories and outside consultants which will enable DoD to make informed judgments about this critical issue.

This report was prepared by current and past members of the ASVAB Working Group, an inter-Service committee chartered by DoD to develop ASVAB and to ensure its effective use. The information contained herein is based on DoD and Service letters, memoranda, and research documents. Supporting references can be found in the report's appendices. Technical research reports, however, are not included. Copies of those reports can be obtained from the relevant personnel research laboratories.

# HISTORY OF THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) 1974-1980

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## A BRIEF HISTORY OF THE ARMED FORCES QUALIFICATION TEST (AFQT)

During World War II, men were not accepted for service unless they had completed the 4th grade or were able to pass screening tests. Initially the screening was for literacy, but non-language tests were also introduced for service qualification. After service entry, the primary test instruments for assignment purposes were the Army General Classification Tests (AGCT series), which were later supplemented by special tests to measure mechanical, clerical and other aptitude areas. Raw scores on the AGCT were converted to Army Standard Scores which could then be grouped in Army Grades I-V (forerunner of Mental Categories) to allocate men within the Army to various units.

The Armed Forces Qualification Test (AFQT) was developed initially to serve as the single DoD-wide screening test to determine trainability for military service. Impetus for its development was provided by the Selective Service Act of 1948 which stipulated that an Army Standard Score of 70 or higher on the AGCT was needed to qualify for service (the score of 70 was to be the floor of AFQT category IV). Introduced operationally on January 1, 1950, AFQT Forms 1 and 2 became the basis for qualitative distribution of military manpower accessions among the Services on an "equitable" basis starting during 1951.

Originally developed as a classification test, the AGCT was used by the Army for enlistment screening in the late 1940s and became the model for the AFQT. In developing AFQT norms, or conversion tables from raw test scores to percentile distributions, standardization was based upon an approximation of the total population available for military service under mobilization conditions. This was required to facilitate equitable distributions of the available manpower pool among the Services in the event of mobilization. Two sampling plans were considered in 1948 to provide this representation of the mobilization population. The first plan called for sampling the civilian population, and this was rejected for economy reasons. The accepted plan took advantage of existing AGCT data. It was assumed that the millions of men tested during World War II would not differ essentially in age, education, occupational status, geographic distribution, etc., from a similar population to be utilized five or ten years later, (1949-1954 time frame).

The population selected for representation covered all men on duty in all the Services as of December 31, 1944. It included officers as well as enlistees, and where test data were not available, such as for many officers with direct commissions, corrections were later made to the score distributions. All AGCT scores for this population were converted to Army Standard Scores and expanded to represent the total December 31, 1944 strength (11,694,229).

The norming or standardization of AFQT Forms 1 and 2 against the AGCT distributions for the estimated mobilization base involved the collection of AGCT and AFQT data for a total of 4,000 new recruits to the Military Services. Since this population had already been selected on the basis of enlistment cutting scores used by the Services, additional testing was required at selected Army installations "to fill in the gaps at both ends" of the test score distributions. The resulting scores were converted to Army Standard and AFQT percentile scores.

Successive AFQT forms continued to be normed back to the World War II mobilization population through readministration of AGCT Form 1C. AFQT 3 and 4 were introduced operationally on January 1, 1953; AFQT 5 and 6 on August 1, 1956;

and AFQT 7 and 8 on July 1, 1960. Starting in 1972 and continuing through 1975, the Services were not required to use a common AFQT. Each Service was permitted to build conversion tables from its own test battery as a basis for estimating an individual's AFQT score. The Armed Services Vocational Aptitude Battery (ASVAB) became operational as the single DoD selection and classification battery in January 1976, and AFQT scores were again based upon common tests. However, the ASVAB AFQT was not normed-back to the AGCT as had been the preceding AFQT Forms 1 through 8. Instead, it was normed against the AFQT scores derived by the Services from their own batteries.

Since its introduction in 1950, the AFQT has undergone changes both in its character and usage:

Content - Originally a compilation of tests covering three areas: verbal, arithmetic reasoning, and spatial relations. A fourth area was added--tool functions - which was later dropped. The AFQT to be introduced in 1980 will not include spatial relations and will provide increased scope to the verbal and quantitative areas.

Scoring - The initial, current and new versions scored the number of right answers only. AFQT Forms 3 through 8 used a correction formula for guessing.

Difficulty Level - All forms have had more items whose difficulty was appropriate to the ability of the lower half than to the upper half of the mobilization population.

Number of Items and Presentation - The number of items comprising AFQT and their ordering (spiral omnibus versus discrete test content) have varied over time.

Test Motivation - Test scores can be affected significantly by the conditions under which they are given. During draft periods, many individuals were motivated to obtain low scores (and so avoid induction) in contrast with voluntary enlistment periods when applicants have been highly motivated to perform well on selection tests.

Norming - Attempts were made to norm AFQT Forms 1 through 8 back to the World War II mobilization population through a common reference test--AGCT. This procedure was not followed with later AFQT forms.

Conditions such as the composition, size and selection of norming samples, variance in test administration, motivation of test takers, and other factors may have contributed to some degree of "slippage" from form to form in norming back to the World War II mobilization population.

## ORIGIN OF THE ASVAB

### Background

On May 1, 1974, the Defense Manpower Policy Council<sup>1/</sup> approved the recommendation of Mr. William K. Brehm, Assistant Secretary of Defense (Manpower and Reserve Affairs) (ASD/M&RA), that a single test battery be used by the Services for selecting enlistees and for placing them into the various military occupations.

At the time of this decision, there was already a joint-Service mental test in use in the DoD High School Testing Program<sup>2/</sup>--the Armed Services Vocational Aptitude Battery (ASVAB). The ASVAB was administered at high schools across the country to stimulate enlistments and improve the efficiency of the recruiting program. Recruiters received lists containing the names, addresses, and scores of students who were tested. The information served as a prospect list for recruiters. The program also assisted the recruiters in maintaining a close and favorable relationship with school administrators and guidance counselors.

The version of the test used for high school testing was ASVAB-2. The Air Force and Marine Corps used ASVAB-3, a parallel form to the high school version, for operational testing of applicants for enlistment. ASVAB-4 had also been developed for the high school program, but it was never implemented.

Because the ASVAB was already in use in the High School Testing Program and by the Air Force and Marine Corps, the Defense Manpower Policy Council determined that ASVAB should be revised to serve as the common military selection and classification test. The Air Force, already serving as the executive agent for the High School Testing Program, was designated as the executive agent for further ASVAB development and expansion. The Council cited five advantages to a common test as the basis for its decision. A common test was desirable because

- high school testing would be more useful to all Services.
- applicants for more than one Service would not be subjected to multiple testing.
- inter-Service referrals of applicants would be facilitated.
- it would facilitate more accurate cross-Service comparisons.
- test development work of Service psychologists would be concentrated on a single enlisted accessions and classification instrument.

### Establishment of the ASVAB Steering Committee and Working Group

The decision to develop ASVAB as a common selection and classification test was formalized by Mr. Brehm in a May 9, 1974 memorandum to the Assistant Secretaries of the Services (M&RA).<sup>3/</sup> That same memorandum announced the establishment of the ASVAB Steering Committee and set May 22, 1974 as the date for its first meeting. Chaired by Mr. Donald W. Snull, Deputy Assistant Secretary of Defense (Manpower Requirements & Analysis), it was composed of senior officers and civilians from the offices of their respective Deputy Chiefs of Staff for Personnel. The members of the Steering Committee representing their various Services were: Major General George W. Putnam, Jr., Director of Military Personnel Management,

Headquarters Department of the Army; Rear Admiral E. J. Carroll, Assistant Chief for Personnel Planning and Programming, Bureau of Naval Personnel; Colonel H. L. Emanuel, Deputy Director of Personnel Plans, Headquarters U.S. Air Force; and Mr. Edward A. Dover, Supervisory Research Psychologist, Headquarters U.S. Marine Corps. The main function of the Steering Committee was to provide policy recommendations on ASVAB development, implementation, and use to the ASD(M&RA). Of course, they also conveyed the positions of their Services on ASVAB issues.

The first meeting of the Steering Committee was basically concerned with the need for the common test battery and the chartering of the ASVAB Working Group. Mr. Srull indicated the goal of ASVAB was a more cohesive DoD testing system, greater efficiency in test research and development, and overall improvement in the utility of the testing programs. The responsibilities of the Working Group were to design the new ASVAB so as to accommodate Service requirements and to develop plans for validating ASVAB. <sup>4/</sup> While the Working Group was to be a joint-Service activity, its members were to represent the positions of and be responsible to their individual Services. Mr. Gus C. Lee, Special Assistant for the All-Volunteer Force, OASD(M&RA) was appointed by the Steering Committee as the chairman of the Working Group. The Working Group was to be composed of Service testing policy staffers and scientists from the Service personnel research laboratories. Because the Air Force was executive agent for ASVAB, the Air Force Human Resources Laboratory (AFHRL) was designated as the lead research activity. Three forms of ASVAB were to be developed. ASVAB-5 would be used in the High School Testing Program while ASVAB-6/7 would be administered as the common selection and classification battery. Mr. Brehm's original timetable for ASVAB implementation, as announced in the Steering Committee meeting by Mr. Srull, was September 1, 1975.

### Early Problems

Activities over the next several months centered within the ASVAB Working Group. The Working Group met formally for the first time on June 5, 1974, and then again on June 28, 1974 for the purpose of organizing the Working Group and then developing the technical specifications of the new tests. In addition to Mr. Gus C. Lee and Mrs. Jeanne B. Fites of OASD(M&RA), Service representatives included Mr. Louis A. Ruberton, Dr. Milton H. Maier, and Dr. M. A. Fischl (Army); Lt Commander L. W. Beguin and Mr. Leonard Swanson (Navy); Colonel D. H. Taylor, Major W. S. Sellman, and Dr. Lonnie D. Valentine (Air Force); Mr. Edward A. Dover (Marine Corps); Mr. Joseph P. Cowan (Coast Guard); and Dr. Harry D. Wilfong (Armed Forces Vocational Testing Group). During the period June-October 1974, the Working Group was concerned with the issues of test content, item selection and calibration, and test validation.

The first major issue to arise within the Working Group involved the implementation of ASVAB-6/7 before it had been validated against success in Service training schools. The Air Force and the Marine Corps had already been using ASVAB-3 as their selection and classification test so validation before implementation was not a real concern for those Services. The Army agreed with the Navy that validation was important but was willing to accept statistical correspondence between existing and new ASVAB tests as evidence of ASVAB's validity. The Navy representatives on the Working Group felt so strongly about this issue that they elevated it to the Steering Committee. On November 6, 1974, Rear Admiral E. J. Carroll sent a memorandum on ASVAB development and implementation to Major General G. W. Putnam (Army), Major General K. L. Tallman (Air Force),



and Brigadier General K. McLennan (Marine Corps). In it he wrote, "Recent meetings and discussions concerning progress in developing ASVAB-5/6/7 have cast considerable doubt on prospects for full, effective implementation of the new batteries by September 1, 1975 . . . . There appears to be no reasonable possibility that adequate Service validation can be accomplished to permit exclusive use of ASVAB for all Service selection and entry processing purposes as of September 1, 1975." Admiral Carroll inclosed a projected "plan of action and milestones" based on what he believed to be realistic estimates of time still required to resolve significant ASVAB development problems, plus the time required for validation by the Services. He recommended that implementation be delayed until June 1, 1976.<sup>5/</sup>

Admiral Carroll's letter did not develop strong support for the Navy's position among the other Services. General Putnam responded on November 13, 1974, that while the Navy's proposed changes did not present any problems to the Army, he believed that the proposal should be given to the Working Group for its consideration before presenting it for a decision to the Steering Committee.<sup>6/</sup> General McLennan and General Tallman were even less supportive. On November 8, 1974, General McLennan wrote, "The Marine Corps favors the September 1, 1975 implementation of ASVAB Forms 5, 6, and 7 for accession testing . . . . The rationale for this position stems from the fact that since July 1, 1974, the Marine Corps has been using ASVAB Form 3 as its principal instrument for accession testing and is acutely desirous of obtaining backup tests for ASVAB-3 as early as possible."<sup>7/</sup> Finally, the Air Force as executive agent for ASVAB could hardly go against the OASD(M&RA) implementation guidance. General Tallman's November 13, 1974, letter to Admiral Carroll stated, "We fully understand your reservations concerning the implementation of ASVAB without appropriate Navy validation. One solution to your problem might be to explain your misgivings to OSD(M&RA). In this regard, a suggestion that you be allowed to continue administration of your basic classification battery along with ASVAB-5 until you have collected sufficient data to complete validation research might be appropriate. In any event, because of our previous experience with ASVAB and the OSD pressure for its early adoption as a common production test, we feel compelled to adhere to the plan for September 1975 implementation."<sup>8/</sup>

#### Delays in the Implementation Schedule

The ASVAB Steering Committee met for the second time on January 17, 1975, to review the status of ASVAB development and Service test validation plans, and to outline actions needed to meet milestones. Mr. Donald W. Snull again chaired the group which included Major General G. W. Putnam, Rear Admiral E. J. Carroll, Colonel H. L. Emanuel, and Mr. E. A. Dcver. Mr. Gus C. Lee, Mrs. Jeanne B. Fites, Major W. S. Sellman, Dr. Lonnie Valentine, and Dr. M. F. Wiskoff represented the Working Group. Dr. Valentine presented the report on the status of test development. Because of slippages in test item development, AFHRL had fallen approximately 45 days behind schedule. After discussion of what this slippage would mean for the September 1975 implementation date, Rear Admiral Carroll brought up the Navy position that because of the lack of validation data that date should be delayed until June 1976. Mr. Snull then directed Mr. Lee to prepare a report to Mr. Brehm which would report on problems in meeting the September 1975 implementation as well as discuss alternative courses of action and provide Steering Committee recommendations. That report was submitted by Mr. Snull to Mr. Brehm on February 12, 1975.<sup>9/</sup> In the transmittal memorandum, Mr. Snull indicated something

of his impatience with the Services for not getting ASVAB ready for use in a more expeditious manner. It should be noted that almost from the time of the May 1974 decision to use ASVAB as a joint-Service test, both Mr. Brehm and Mr. Snull had frequently indicated to OASD(M&RA) staff and representatives of the Air Force that they could not understand why it took so long to develop a test.

In his February 12, 1975 memorandum to Mr. Brehm, Mr. Snull wrote, "The Service laboratories have not been as aggressive as they might have been in trying to meet the time schedule set last summer. The Air Force Human Resources Laboratory, which is the lead laboratory for the new ASVAB, has fallen somewhat behind in construction of the experimental test material needed for item analysis. The most significant slippage, which cannot be made up at this time, is due to the Navy laboratory not yet beginning validation studies of ASVAB-type items. Since the other Services have done this in the past, the Navy started further behind and did not take aggressive action to "catch-up". As a result, the Navy will have to take longer for its validation studies than the current schedule permits." Mr. Snull went on to say that he had met with the Service policy representatives and the laboratory scientists, and he believed their efforts were back on track. Mr. Snull, however, also advised Mr. Brehm that October 1, 1975 was the earliest date on which the new ASVAB could be used operationally. Mr. Brehm, in a handwritten (undated) note to Mr. Snull wrote, "Don--OK, but I don't like the delay."<sup>10/</sup>

In the report sent to Mr. Brehm on February 12, 1975, the issues with respect to norming, validation, and implementation and the Service views on them were carefully stated. "The issue is one of the date of implementation, particularly the "short-cuts" in validation or the risks of inefficient administration which can be accepted in order to obtain earlier implementation. The feasibility of use of the new ASVAB as a common Service entry test which meets the needs of the Services and the High School Testing Program is not an issue. There is general agreement with the acceptability of the earliest implementation date which does not compromise norming, validation, or efficient test administration. The issue narrows down to how long to postpone implementation in order to provide better norming, validation, or more efficient test administration."

The Army, Air Force, and Marine Corps all agreed that October 1, 1975, was the earliest date for operational use of the ASVAB in meeting the above specification. The Navy continued to be opposed to using ASVAB for determining eligibility for Navy school training prior to its validation in selected Navy schools. The Navy did not have confidence in using validation procedures which the other Services planned to use. Navy believed that the earliest it could plan on full operational use of the new test was June 1, 1976.

On February 25, 1975, Mr. Snull sent a memorandum to the members of the Steering Committee in which he advised that Mr. Brehm had approved October 1, 1975, instead of September 1, 1975, as the revised date for use of the new ASVAB.<sup>11/</sup> In addition, he requested the Air Force, as executive agent for ASVAB, to submit by March 19, 1975, a detailed plan of all actions necessary to implement ASVAB. Mr. Snull also granted the Navy authority to begin only partial use of ASVAB on October 1, 1975, with full use scheduled for June 1, 1976. This decision was to allow Navy to administer both ASVAB (for enlistment eligibility purposes) and its own classification battery (to place new sailors in the various Navy occupations) during that eight-month period. ASVAB validation information would be collected so that by June 1976 ASVAB could be used for both selection and classification. A plan for how the Navy would accomplish the partial use of ASVAB was due to OASD(M&RA) by March 12, 1975.

In conjunction with the Working Group members of the other Services, the Air Force prepared the ASVAB development plan requested by Mr. Snull. It was approved by the Working Group on March 13, 1975, and forwarded by Colonel W. L. Emanuel, Air Force member of the Steering Committee, to Mr. Brehm on March 17, 1975.<sup>12/</sup> In an April 9, 1975 memorandum to the Air Force, Mr. Snull approved the plan, requested it be provided to the other Services, and asked for a bi-monthly status report beginning on June 1, 1975, and continuing until ASVAB was implemented.<sup>13/</sup>

The Navy responded to Mr. Snull's February 25, 1975, request for a plan for the partial use of the ASVAB on March 18, 1975.<sup>14/</sup> In a memorandum to Mr. Snull, Rear Admiral E. J. Carroll indicated that beginning on October 1, 1975, Navy would accept for enlistment any applicant with an ASVAB-6/7 qualifying score acquired through testing by another Service. The Navy would continue to use its Basic Test Battery (BTB) for enlistment, classification, and assignment relative to its nuclear and advanced electronics/technical fields. Beginning approximately June 10, 1975, (when test materials would be available from the Air Force), the Navy would conduct validation studies for ASVAB-6/7 as a predictor of school performance, to supplement ongoing studies on ASVAB-2. The study was to be completed by June 1, 1976, when the Navy would make full use of ASVAB.

The Navy plan was not what Mr. Snull wanted to see. On April 9, 1975, he wrote to Admiral Carroll advising that, "it would be preferable to have the Navy administer the new ASVAB in at least those fields for which a new ASVAB score on a test administered by one of the other Services is acceptable." Snull continued, "I recognize that there is some disadvantage to your test administrators in administering both the Basic Test Battery and the new ASVAB; however, it would be useful to have your views as to whether there is some acceptable method by which you could accomplish this."<sup>15/</sup>

In reply to Mr. Snull, Rear Admiral D. L. Freeman, Deputy Chief of Naval Personnel, affirmed the Navy's position on the partial use of ASVAB in a April 25, 1975 memorandum.<sup>16/</sup> He informed Mr. Snull that, "The prime Navy recruiting incentive today for high quality applicants is guaranteed assignment to a technical school. These guaranteed assignments cannot be made on the basis of an unvalidated ASVAB test battery. Administration of the BTB would thus be necessary to screen the best qualified candidates and the ASVAB results would serve no useful purpose. The investment of time, effort, and money to administer two long test batteries does not appear warranted."

The Navy's position was reiterated at an April 28, 1975, Steering Committee meeting. Admiral Carroll again told Mr. Snull that the ASVAB must be completely documented and validated before the Navy could use it. He went on to say that he saw no justification for holding to a planning date which would ensure the development of an inadequately documented test battery. Mr. Snull informed the Steering Committee that this delay would be unacceptable to Mr. Brehm and that the October 1, 1975, implementation date was not negotiable.

The ASD(M&RA) made the final decision on this issue. In a June 9, 1975 memorandum to the Assistant Secretary of the Navy (M&RA), Mr. Brehm indicated that he understood the Navy's concern regarding validation of the ASVAB. Therefore, he did not object to the Navy's administering its test concurrently with the ASVAB during the October 1, 1975 to January 1, 1976 period for all Navy non-prior service applicants.<sup>17/</sup> Further, Mr. Brehm added that he had no objections to

concurrent testing for Navy applicants to the six-year nuclear, advanced electronics, and advanced technical fields continuing during the January 1, 1976 to June 1, 1976 timeframe. This limited period of testing overlap was to permit the completion of ASVAB validation for the Navy. It should be pointed out that this was what Mr. Brehm had in mind in February 1975, when he first approved the Navy's partial use of ASVAB.

It should be noted that the Navy concern for validation before implementation was in no way related to norming. Norming is the conversion of raw scores to percentiles and permits the evaluation of an individual's test performance relative to that of other examinees. Validation, on the other hand, is a statistical check of how well the test works in predicting success in technical training. With a valid test, examinees who score high also have a high probability of doing well in training.

#### More Service Concerns--More Delays

The Steering Committee next met on July 9, 1975, to discuss the status of ASVAB development. Mr. Snull chaired the meeting. The Service representatives were Major General John F. Forrest (replaced Major General Putnam), Rear Admiral W. R. Smedberg IV (replaced Rear Admiral Carroll), Colonel H. L. Emanuel, and Mr. Edward A. Dover. As of that date, development was basically "on-track" with camera ready masters of the test having already been sent to the printers. During the meeting, the Army indicated that the test was too difficult and recommended easier items be substituted for more difficult ones in order to permit selection among applicants at lower levels of mental ability. The Steering Committee agreed and requested the Army to provide substitute items for inclusion in the test. Once the decision to substitute the items was made, the Air Force stopped the printing.

With such an "eleventh-hour" situation concerning the printing, it would have been impossible to meet the milestones necessary for an October 1, 1975, start-date. Accordingly, on July 31, 1975, in a memorandum to the Service Assistant Secretaries (M&RA), Mr. Brehm changed the implementation date to January 1, 1976.<sup>18/</sup> The new date would also coincide with the date that all DoD enlistment testing would be done at Armed Forces Examining and Entrance Stations.

To this point, the Navy had been the only Service to nonconcur with the implementation dates set by Mr. Brehm. Although it did not agree with either the October 1975 or January 1976 date, the Navy did react positively to Mr. Brehm's July 31, 1975 memorandum. On October 14, 1975, Vice Admiral J. W. Watkins, Chief of Naval Personnel, advised the Commander of the Navy Recruiting Command that the Navy would comply with the January 1, 1976 implementation.<sup>19/</sup>

The item difficulty issue was not easy to resolve. Upon receipt of the substitute items from the Army, the Air Force "cut" them into the camera ready master copies and on August 5, 1975 again initiated printing. On August 6, 1975, the Navy lodged a formal protest with OASD(M&RA) because they believed that the Steering Committee and OASD(M&RA) had made an unilateral decision to include the Army's easy items at the expense of the Navy. The Navy's position was that the easy items would not differentiate among their personnel in the upper ability range and would therefore adversely impact on its classification system.

The difficulty issue was discussed and resolved on August 7, 1975, at a hastily called meeting of the Working Group. Test items acceptable to all Services were selected for inclusion in the test battery. The Working Group solution was formally endorsed by the Steering Committee on August 21, 1975.

As it turned out, the August 21, 1975, Steering Committee meeting was the last one which would be held for three years. Mr. Srull had left his position within OASD (M&RA) so the August 1975 meeting was chaired by Mr. I. M. Greenberg, Acting Deputy Assistant Secretary of Defense (Manpower Requirements & Analysis). Further, Mr. Gus C. Lee, chairman of the Working Group, had retired from OASD(M&RA) in May 1975. Accordingly, during the August 1975 meeting, Major W. S. Sellman, the Air Force testing policy staffer, was asked by the Steering Committee to assume that position. Major Sellman served as the chairman of the Working Group from August 1975 to August 1978.

The last policy decisions made by the Steering Committee in 1975 were in respect to the difficulty of items to be included in the operational ASVAB and to issues related to the high school version of the test. Additionally, the Air Force, as executive agent, was directed to proceed as soon as possible to develop the follow-on versions--ASVAB-8/9/10.<sup>26</sup> The policy matters now having been resolved, OASD(M&RA) believed that the efforts remaining were technical and that there was no further need for its involvement in the process.

#### Implementation of ASVAB

During August 1975 through December 1975, no significant ASVAB issues arose. The time was filled with frenetic activity as the Services and their personnel research laboratories were faced with and solved last-minute technical and logistical problems. After the early inter-Service disagreements, this period was marked by Service cooperation as they worked together to effect the implementation of ASVAB. That there were problems because of the compressed time schedule in which many technical development tasks occurred will be evident in the remainder of this paper. Be that as it may, ASVAB was implemented as the DoD enlistment eligibility test on January 1, 1976.

#### REFERENCES

1. The Defense Manpower Policy Council was chaired by the Assistant Secretary of Defense (Manpower and Reserve Affairs). Its membership included the Assistant Secretaries of the Services (Manpower and Reserve Affairs) and the Service Deputy Chiefs of Staff for Personnel.
2. In 1973, OASD(M&RA) established the Armed Forces Vocational Testing Group (AFVTG) to manage the DoD High School Testing Program. When the U.S. Military Enlistment Processing Command (MEPCOM) was established in January 1976, AFVTG was deactivated and became the MEPCOM Testing Directorate. MEPCOM is currently the central manager for all ASVAB testing, including operational testing at Armed Forces Examining and Entrance Stations and in high schools.
3. Assistant Secretary of Defense (M&RA) Memorandum, May 9, 1974; Armed Services Vocational Aptitude Test Steering Committee.
4. Working Group responsibilities later evolved into resolving ongoing problems in ASVAB research and development, implementation, and maintenance.
5. Department of the Navy (Pers-2/5-74) Memorandum, November 6, 1974; ASVAB Development and Implementation.
6. Department of the Army (DAPE-MPE-CS) Memorandum, November 13, 1974; ASVAB Development and Implementation.

7. HQ, U.S. Marine Corps (MPI-M7) Memorandum, November 8, 1974; ASVAB Development and Implementation.
8. Department of the Air Force (DPXOS) Letter, November 13, 1974; Armed Services Vocational Aptitude Battery (ASVAB) Development and Implementation.
9. Deputy Assistant Secretary of Defense (MR&A) Memorandum, February 12, 1975; Implementation of New ASVAB as Single Entry Test.
10. Steering Group Report - Status of Development and Implementation of Armed Services Vocational Aptitude Test Battery.
11. Deputy Assistant Secretary of Defense (MR&A) Memorandum, February 25, 1975; Revised Planning Dates for Use of Armed Services Vocational Aptitude Battery (ASVAB).
12. Department of the Air Force (DPXOS) Letter, March 17, 1975; Revised Planning Dates for Use of Armed Services Vocational Aptitude Battery (ASVAB).
13. Deputy Assistant Secretary of Defense (MR&A) Memorandum, April 9, 1975; Revised Planning Dates for Use of Armed Services Vocational Aptitude Test Battery (ASVAB)
14. Department of the Navy (Pers-212d) Memorandum, March 18, 1975; Navy Plan for Partial Use of the New ASVAB.
15. Deputy Assistant Secretary of Defense (MR&A) Memorandum, April 9, 1975; Navy Plan for Partial Use of the New ASVAB.
16. Department of the Navy (Pers-212d) Memorandum, April 25, 1975; Implementation of the New ASVAB.
17. Assistant Secretary of Defense (M&RA) Memorandum, June 9, 1975; Enlisted Accession Processing.
18. Assistant Secretary of Defense (M&RA) Memorandum, July 31, 1975; Enlisted Accession Processing.
19. Department of the Navy (Pers-212d) Memorandum, October 14, 1975; Enlisted Accession Testing.
20. Assistant Secretary of Defense (M&RA) Memorandum, December 2, 1975; ASVAB Test Policies.

DEVELOPMENT AND INITIAL NORMING OF THE ASVAB  
(June 1974-December 1975)

Planning

On June 5, 1974, the ASVAB Working Group met for the first time. A preliminary plan for development of the battery was presented by the Air Force Human Resources Laboratory (AFHRL).<sup>1/</sup> This plan was for a battery consisting of 12 cognitive subtests, two perceptual-speed subtests and an interest subtest formed by combining the Army Classification Inventory (ACI), the Navy Vocational Interest Inventory (NVII), and the Air Force Vocational Interest-Career Examination (VOICE). It was believed that this configuration, requiring a little over four hours of actual test time, would adequately cover the selection and classification battery needs of the Services.

When the initial plan for ASVAB was reviewed by the Service Recruiting Commands, they advised the Working Group that because enlistment processing time was at a premium, a shorter test was desirable.

Accordingly, at a June 28, 1974 meeting of the Working Group a substitute plan for the battery design was developed.<sup>2/</sup> The substitute plan would provide a battery composed of 13 subtests, one of which would be a combination of VOICE and ACI, and would require 3 hours 19 minutes testing time. Battery content was later shortened even more by cutting the numbers of items planned for some subtests. This reduced actual testing time to 2 hours and 35 minutes.

Development

By the August 14, 1974 Steering Committee Meeting, assembly of experimental items for the various subtests was in progress.<sup>3/</sup> Areas of continued Service disagreement were pointed out to the Committee. Specifically, there was still disagreement about permissible test lengths and about what interest material, if any, would be included in the battery. The Steering Committee was cautioned that the new battery could not be validated prior to a Fall 1975 implementation, and, consequently, validity would have to be inferred from earlier tests. The Steering Committee indicated that they still intended to implement the test in September 1975, if at all possible.

Mr. Gus C. Lee called a meeting of the Working Group for September 23-24, 1974, to resolve issues on norming study design, adequacy of the item pool available to the battery, procedures to be followed in item selection for the final versions of the battery, conduct of test validation studies by the Services, and inclusion of interest material in the battery. At the September 23-24, 1974, meeting, Working Group members expressed concern over the DoD goal of September 1, 1975 battery implementation, especially as it affected needed validation studies.<sup>4/</sup> Such an early implementation date deprived the Services of the opportunity to empirically develop prediction composites and did not permit adequate time for studies of racial equity and fairness.

At this September 1975 Working Group meeting, Service representatives agreed that inclusion of interest material in the battery was desirable. Air Force and Navy had research in the area of interest measurement in progress which provided evidence that the measures were useful in predicting later job satisfaction. However, the Service formats for such material were too different for easy

consolidation into a single interest test. Moreover, the Joint Recruiting Commanders had recommended a two hour, 30 minute time limit for the battery (especially for the high school version), and this mitigated against inclusion of an interest scale.

At this same meeting, Working Group members agreed that item analysis, preparatory to final item selection, would be accomplished on Service reception center samples which included proportionate representation of women and ethnic minorities. The item pool was distributed to members for review and comments. With respect to normative analysis of the final test versions, the Working Group decided that ASVAB-2 would be used as a reference measure for norming the new tests. It was noted that this would necessitate a four-hour block of experimental testing time when normative data were collected.

In mid-December 1974, the first of the booklets, printed for item analysis purposes, was finished by the printers.<sup>5/</sup> At a January 17, 1975 meeting of the Steering Committee, it was reported by Dr. Valentine that, while completion of item analysis of a pool of 600 to 700 items had been scheduled for January 31, 1975, this date would have to be slipped since testing on these booklets by the Services would not begin until January 20, 1975.<sup>6/</sup> Thus, final selection of items to go into the three forms of the battery would have to slip to March 31, 1975, and printing of experimental booklets for the final batteries would have to slip to the last half of April. These slippages, in turn, would cause delay in collection of normative data. The Services expressed the view that the September 1st date should be postponed.

The Navy's representatives at the Steering Committee meeting were especially concerned about the change over from their Basic Test Battery (BTB) to the ASVAB because they had not used ASVAB in the past, and consequently, had not had opportunity to develop Navy validity data on the battery. They proposed that Navy be allowed to delay their implementation until June 1, 1976, to permit development of such data for the Navy. For the other Services, Mr. William K. Brehm (ASD/M&RA), delayed implementation to October 1, 1975. It is especially noteworthy that the Marine Corps expressed the view that new tests were needed because their current test (ASVAB-3) was compromised.

During March 1975, printing of additional item analysis booklets was accomplished, and item analysis administration of the first group of experimental ASVAB item booklets had been completed by all Services except Army.<sup>7/</sup> Item analysis of these three experimental booklets was in progress with the data available to that time.

During April 1975, analysis of items in the first half of the experimental item booklets was completed and tentative versions of four of the 13 subtests for the three battery forms were edited and prepared in camera ready master copy.<sup>8/</sup> Copies of these were distributed to the Services for approval. Item selections for two additional subtests which required drafting services were made, and these materials were turned over to a draftsman for final copy development. Answer sheets for the remainder of the item analysis booklets were arriving at AFHRL from the Services rather slowly. Mr. Louis A. Ruberton, Headquarters Department of the Army, estimated that they would complete their portion of the item analysis testing on about May 15, 1975. On April 28, 1975, Dr. Valentine advised the Steering Committee that the slow return of item analysis materials would necessitate a two-week slippage of test development milestones.

On July 21, 1975, norming study booklets for the three forms of the test battery were delivered to AFHRL by the Defense Printing Plant.<sup>9/</sup> However, after delivery



of the master copy to the printers, the Army Research Institute (ARI) representative on the Working Group asked that some of the test items be deleted and replaced by some easier items of their choice. Replacement pages incorporating these changes were being locally printed by AFHRL for insertion into the test booklets prior to their shipment to testing sites for normative data collection. However, status of these late changes was indeterminate. The Navy Personnel Research and Development Center (NPRDC) representative to the Working Group was displeased with the Army item substitutions and protested changes in five content areas.

Issues associated with item difficulty (item substitutions) were resolved at an August 7, 1975 meeting of the Working Group.<sup>10/ 11/</sup> During August, ASVAB-7 booklets with Army substitute items pasted in them were shipped to normative testing sites, and Army item substitutions in the experimental ASVAB-5 and ASVAB-6 were accomplished (preparatory to shipment by September 4, 1975). Master copy of forms 6 and 7 was submitted for printing during August.

### Norming

A major concern in the development of a new test as a replacement for an existing test is insuring that scores on the two can be used interchangeably. Using the AFQT percentile distribution as an example, existing and replacement tests should be equated so that identical percentile scores on each have the same meaning relative to a total population. Two major elements to establishing this equivalency are: (1) using populations of people who may be considered equivalent and (2) using a reference test to tie the populations together. The term "norming" is used to describe the psychometric process by which raw scores on a test are converted to standard scores, thus allowing comparisons within groups and between groups across time.

Planning for the norming of ASVAB-5/6/7 began at the ASVAB Working Group meeting of September 23-24, 1974, attended by research members of each Service. Guidelines for the normative sample were specified: (1) a broad representation of all ability levels was important; (2) racial minorities in the proportion found in the population were desired; and (3) women in proportion to their expected applicant rate were desired.<sup>12/</sup> If these factors were not considered, the standardization sample would not reflect the population from which the Services obtain enlisted personnel. It was recognized by the ASVAB Working Group members that testing of recruits only at Service reception centers would not yield a full range sample because persons with very low AFQT scores are not accepted for enlistment. Testing of applicants at Armed Forces Entrance and Examining Stations (AFEES) would be necessary to extend the range at the low end of the scale and thereby make it representative of previously used AFQT norming samples.

The plan for norming ASVAB-6/7 was prepared by AFHRL in July 1975.<sup>13/ 14/</sup> A random sample of approximately 400 recruits per form was tested at the three Naval Training Centers (Great Lakes, Oakland and San Diego) and 400 recruits per form were tested at the Air Force Military Training Center, Lackland Air Force Base, Texas. Additionally, 750 applicants with AFQT scores of 50 or less were tested for each form of ASVAB at AFEES. The reference test for AFEES testing was the operational AFQT from the Army Classification Battery (ACB 73). This operational test was selected to avoid administering another test at the AFEES. The reference test for Navy and Air Force reception center testing was the AFQT from ASVAB-2 (the high school equivalent form to ASVAB-3 being used operationally by the Air Force and Marine Corps). A counterbalanced design, in

which the reference test preceded the ASVAB for one half the sample with the reverse order in the other half of the sample, was used in both AFEES and reception center administrations to control for possible score differences due to practice on similar tests.

On July 23, 1975, Mr. Louis A. Ruberton, Headquarters Department of the Army, visited AFHRL to discuss normative testing to be accomplished at AFEES. He had sent letters to the U.S. Army Recruiting Command (executive agent for the AFEES) and was in the process of arranging for collection of normative data. However, Mr. Ruberton noted that current AFEES flow was such that using 30 AFEES for data collection, four to six weeks of testing would be necessary to obtain adequate numbers of "low ability" subjects for the normative samples. On the following day (July 24, 1975), Mr. Ruberton called Dr. Valentine to report that the AFEES had their testers so dispersed into mobile testing teams that there were inadequate numbers of them at the AFEES to accommodate the experimental normative testing. Air Force and Navy assistance in accomplishing this testing was requested.<sup>15/</sup>

ASVAB-6/7 was administered to applicants at 29 AFEES in five geographical areas across the nation and to recruits at Air Force and Navy training centers in October 1975. Personnel from the various Service personnel research laboratories monitored the early testing at the AFEES and the training centers, which was actually conducted by personnel responsible for operational testing at these sites. All scoring of answer sheets from ASVAB-5/6/7 testing and that of the AFQT from ASVAB-2 was performed at AFHRL.

Mrs. Iris Massey at AFHRL requested computer analysis of normative data on ASVAB-5/6/7 through the AFHRL computer facility on October 7, 1975.<sup>16/</sup> Completion of these analyses was requested not later than November 10, 1975. At the time of the request, AFHRL data collection had not been completed. The last of the data was expected to arrive at AFHRL on October 20, 1975. These data analyses were performed under severe time pressures resulting from delays in the normative testing process. The standardization samples were selected from each form's total sample of about 1500 by selecting an equal number of cases in each decile on AFQT score. The decile with the lowest frequency determined the size of each stratified sample, which was 610 for ASVAB-5, 530 for ASVAB-6 and 460 for ASVAB-7. Score distributions and cumulative percentages were obtained for each of the ASVAB-5/6/7 subtests, for AFQT and for individual Service composites. Conversion tables were constructed to relate each raw score to the proper percentile score. Intercorrelations and distributional statistics were also computed for each ASVAB subtest and the reference AFQT.

When the analyses were completed, AFHRL prepared the conversion tables and sent them to the Service laboratories for review and approval. After the tables were approved, the Army distributed them to the AFEES. ASVAB-6/7 was implemented for enlistment testing on January 1, 1976.

## REFERENCES

1. Department of the Air Force (AFHRL) Memorandum, June 1974; Plan for Armed Services Vocational Aptitude Battery (ASVAB) Forms 5 and 6.
2. Department of the Air Force (AFHRL) Memorandum, July 1, 1974; Working Meeting on ASVAB Form 5 and 6 Revision, June 28, 1974 at Army Research Institute.
3. Department of the Air Force (AFHRL/PES) Memorandum, August 19, 1974; Trip Report-Washington, DC.
4. Department of the Air Force (AFHRL) Memorandum, September 26, 1974; Meeting of the ASVAB Ad Hoc Committee, September 23-24, 1974, at Navy Personnel Research and Development Center, San Diego, California.
5. Department of the Navy (NPRDC) Memorandum, December 16, 1974; Telecon with L. Valentine, AFHRL.
6. Human Resources Research Organization Memorandum, January 22, 1975; Draft Report of Status of ASVAB Development.
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8. Department of the Air Force (AFHRL) Extract from AFHRL Monthly Activity Report, April 1975.
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13. Department of the Air Force (AFHRL) Letter, July 24, 1975; Normative Testing for ASVAB Forms 5/6/7.
14. Department of the Army (USARCPM-A-0) Letter, August 4, 1975; Administration of Experimental ASVAB Forms 5/6/7.
15. Department of the Air Force (AFHRL/PES) Memorandum, July 24, 1974; Status of ASVAB-5/6/7 Development (see reference 9 above).
16. Department of the Air Force (AFHRL) Analysis Request and Routing Form, October 7, 1975; Service Norms for ASVAB Forms 5/6/7.

## STANDARDIZATION CONCERNS IN THE FIRST TWO YEARS (January 1976-January 1978)

### First Indications

From the time Mr. Gus C. Lee retired in May 1975 until Dr. Eli S. Flyer joined the OASD(MRA&L) staff in February 1977, there was little formal OASD(M&RA) involvement with the ASVAB program. Throughout 1976, Major W. S. Sellman, chairman of the Working Group, invited OASD(M&RA) staffers to attend the Working Group meetings and always ensured that they received copies of the resulting minutes. In fact, Ms. Jeanne B. Fites and Mr. F. W. Suffa did on occasion attend Working Group meetings. In addition, after each Working Group meeting, Major Sellman briefed interested OASD(M&RA) officials on the various ASVAB issues. There was, however, no policy guidance regarding ASVAB that emanated from OASD(M&RA) during this period.

After ASVAB-6/7 was implemented on January 1, 1976 as the single DoD enlisted accessions test, Service personnel policy representatives and testing research specialists monitored the early testing results. At the April 8, 1976 ASVAB Working Group Meeting, members of the Working Group discussed the situation that more Mental Category I and II personnel were entering the Services than had been the case prior to the implementation of ASVAB-6/7.<sup>1/</sup> Accessions data from the first two months of operational testing with ASVAB-6/7 indicated an increase in the percentage of Mental Category I and II personnel for most of the Services, but either no change or an actual reduction in the number of Mental Category III and IV personnel.<sup>2/</sup>

Two possible explanations for the increase in high scoring individuals were considered by the Working Group: compromise of the new ASVAB or incorrect norming of it. At about this time, the Army Research Institute (ARI), using data from the ASVAB-6/7 norming administration, compared the new ASVAB with its predecessor test the 1973 Army Classification Battery and detected unusually high statistical relationships among certain subtests. Such relationships could have resulted from short timing (test administrators not allowing examinees the amount of time called for in the testing manual) during the ASVAB standardization testing. If so, the norms would have been incorrect. Since there was no increase in the percentage of incoming low ability enlistees, this observation was noted by the Group but not considered as requiring action. At this Working Group meeting, personnel research laboratory representatives agreed to perform statistical analyses to check the calibration/norming of ASVAB-6/7, with a target date of May 10, 1976 for completion.

### Results of Initial Verifying Analyses

At the May 13, 1976 Working Group meeting, the analyses performed by the Service personnel research laboratories were reviewed.<sup>3/</sup> Results indicated that the percentage of Mental Category I and II accessions was higher after ASVAB-6/7 became operational, but in the lower ability ranges (Mental Category IIIB and IV) there was little mental category change. A recalibration of the test was needed. At this time the Service laboratories agreed to provide data to the Air Force Human Resources Laboratory (AFHRL) that would yield information with which to develop new norms. The creation of those new norms was targeted for June 1976.

The Air Force view at this time (May 18, 1976) was that a recalibration of the test was in order, primarily in the upper mental categories, since the lower ability norms seemed appropriate.<sup>4/</sup> AFHRL prepared an alternative conversion table, based on data provided by the Air Force, Navy, and Marine Corps, from

testing recruits at their recruit training centers. This proposed table is presented in an AFHRL memorandum of June 11, 1976.<sup>5/</sup> It would have raised the score requirements for all mental categories. This table was discussed in a conference call among the three laboratories on June 23, 1976. Navy Personnel Research and Development Center (NPRDC) personnel felt that the AFHRL table over-corrected and was unacceptable, based on percentages of Navy recruits in the various mental groups both before and after the implementation of ASVAB-6/7. NPRDC prepared an alternative table for consideration.<sup>6/</sup> Several ARI analyses during July 1976 pointed to the Army conclusions that negligible, if any, change in the original conversion table was needed, but if the other Services believed a modification at the upper AFQT score range was warranted, the Army would not be opposed. One of these analyses had determined that there was a high degree of correspondence in the percentage of Army accessions in each mental category between the six-month period before use of ASVAB and the six months after the new test was introduced. A second analysis had examined the mental category distribution of a random sample of approximately 1000 Army applicants tested in January 1976, and found a close match with the percentages which define the mental categories.<sup>7/</sup>

#### Adjustment to Original Norms

At the July 29, 1976 Working Group Meeting, Marine Corps Research Report 76-3091 was presented.<sup>8/</sup> The Marine Corps study was based upon the results of testing 3,300 recruits with ASVAB-6/7 and the 1958 form of the Army Classification Battery. The report concluded that the operational AFQT norms were overestimating ability along the entire range, and it proposed an alternative set of conversion tables. At this meeting, Service accession data for the first five and one-half months of 1976 were provided to the Working Group by representatives of the Navy Recruiting Command.<sup>9/</sup> These data were consistent with previously reported trends for early 1976 input to the various Services--increases in Mental Groups I and II and reductions or no change in Mental Groups III and IV--thus generating no support for findings of errors throughout the complete range. In addition, accession mental category data presented by the other Services were interpreted as meaning that the lower end of the norms seemed to be correct, but the upper end of the norms was overestimating ability. Thus, and primarily as a concomitant of Navy urging, a new conversion table for AFQT was agreed upon. It differed from the original in requiring higher raw scores to attain Mental Category I and II percentiles, and in smoothing and relatively minor adjustments in the Mental Category III and below ranges.

In retrospect, the question arises as to whether manpower supply was a factor in the decision not to change the original norms in the lower ability range (i.e. adjusting the norms in the lower end as was done in the upper end would have reduced the numbers of applicants who would have qualified for enlistment). In a memorandum for record of a telephone conversation of July 14, 1976 between NPRDC and ARI scientists, there is a table headed "suggested raw score points that would probably be acceptable to Army policy maker."<sup>10/</sup> It is not clear from the context of the memorandum what the policy issues were. However, on March 10, 1980, Mr. Louis A. Ruberton, Headquarters Department of the Army, stated unequivocally that manpower supply was not a consideration in the decision on the norms. It should be noted that the norms indicated in the "Army policy maker" column were not adopted.

After review by appropriate Service policy headquarters, the revised norms were accepted by all Services. Copies were reproduced by the Air Force and delivered

to the Military Enlistment Processing Command (MEPCOM) in August 1976. In that month, the Army determined that the adjustment in the norms was acceptable. They would provide a distribution closer to that observed under the Army Classification Battery (ACB 73) used prior to January 1976. The Army Recruiting Command was officially advised that the new norms were effective at that time.<sup>11/</sup> On September 1, 1976 the new norms were implemented.

### Continued Tracking

In September 1976, at ARI's request, MEPCOM provided ARI with data for Army and Marine Corps applicants which showed increases in percentage of rejections since adopting ASVAB-6/7.<sup>12/</sup> Although the Marine Corps had contended that the conversions were off at the low end as well as the high end, operational data did not seem to support a need to further modify the norms. Operational data also supported the conversion table correction which had been adopted in July 1976.

Reasons were considered for the apparent conflict between Marine Corps norming research results and operational data. There were many indications that ASVAB-6/7 was already subject to test compromise which would cause aberrations in the mental groups. ARI scientists continued to be concerned about the difficulty of the tests, as expressed in earlier memoranda to Department of the Army management and OASD(M&RA).<sup>13/ 14/</sup> Contrary to popular belief, a hard test is not universally desirable. The more questions (test items) at a given level of difficulty, the more precise the measurement at that ability level. ARI scientists believed that ASVAB contained too few relatively easy items to yield high precision at the low ability levels. A graphic presentation of this is illustrative.<sup>15/</sup> These two arguments were considered more cogent to explain mental category distribution problems than were norming errors. To cope with the first issue, the development of four more alternate ASVAB AFQT portions was planned, and procedures were being developed to detect test compromise. Secondly, planning was underway to develop Forms-8/9/10 of ASVAB.

In November 1976, the Marine Corps modified the norm tables for its Service-unique composites.<sup>16/</sup> This included increasing the raw score points required to achieve a passing score on its supplemental requirement, the General Technical composite, to deal with what the Marine Corps was convinced were erroneous norms.<sup>17/</sup> The effect of this Marine Corps change was to decrease its supply of Mental Category IV recruits.

At the January 26, 1977 Working Group meeting, the Navy representative reported that their Service was still enlisting "too large" a percentage of Mental Category I individuals, (8%-9% instead of an expected 3%), and the Marine Corps representative strongly urged an empirical renorming for all forms of the ASVAB.<sup>18/</sup> At this time, there was increased concern for first-term attrition, and ARI reexamined the possibility that the norm tables might not be accurate. The Marine Corps contention concerning lower end norming problems now received some support. The laboratory scientists agreed to closely monitor the accession data and report any irregularities in mental category distributions to the ASVAB Working Group.<sup>19/</sup>

In early February 1977, the Center for Naval Analysis (CNA) reviewed and compared mental group distribution results derived from Calendar Year 1976 ASVAB testing with Navy Basic Test Battery (BTB) results for the 1975 time frame. CNA published a working paper on "Conversion of ASVAB to BTB-AFQT Mental Groups in Screen Tables." This paper stated that the AFQT norms were inaccurate, both at the upper and lower ends and recommended changes for Navy to use in their selection (screening) procedure. The working paper findings were officially published as a CNA Technical Report.<sup>20/</sup> The technical report was reviewed and with a few minor changes concurred

with by NPRDC. On April 1, 1977, NPRDC issued its report "Development of Revised Mental Group Definitions" at the request of the Deputy Chief of Naval Personnel<sup>21/</sup>. Recommended selection (screening) changes were provided to the Chief of Naval Personnel for review and approval. The end result of the recommended changes upon the Navy would be a marked reduction of recruit supply in the lower mental group levels (IIIB and IV). Changes to the Navy screening procedure were approved and implemented in April 1977. These changes in no way modified the mental category definition or the way the Navy reported mental group distribution to OASD(MRA&L).

At the next Working Group meeting, of July 12-13, 1977, further momentum for restandardizing ASVAB-6/7 was generated. The ARI representative distributed an outline for a proposed method for accomplishing restandardization,<sup>22/</sup> and the Marine Corps representative described a data base already available which could be used for this task.<sup>23/</sup> Most of the Marine Corps research had used a very early form of the Army Classification Battery (ACB 58) as its reference test. The subtests of this ACB, which would comprise a surrogate AFQT, were not parallel to the actual AFQT components. Laboratory scientists agreed to review the data base. Also in the meeting of July 12-13, 1977, the Group was informed by the MEPCOM representative that data collection for norming the four new AFQT forms was to begin in less than 30 days.

#### Actions Through January 1978

At the following Working Group meeting, in October 1977, the Marine Corps data base was thoroughly discussed. The perception of lack of parallelism of AFQT components, and the fact that the Marine Corps testing was limited to in-Service personnel, rather than applicants, resulted in lack of acceptance of this data base. The MEPCOM representative suggested using the standardization of the new AFQT forms as a vehicle for renorming ASVAB-6/7, since data collection was in process. Results would be evaluated at the next meeting, scheduled for January 1978, and a decision would be made to accept these or initiate a major renorming project.<sup>24/</sup>

Between the October 1977 and January 1978 meetings, ARI completed a thorough evaluation of the operational conversion tables and the tables proposed earlier by the Marine Corps at the Working Group meeting on July 29, 1976.<sup>25/</sup> The conclusions of the ARI analysis were:

- either set of conversions would qualify about the same percentage of Army applicants.
- when considering school eligibility. . . fewer men would qualify for each technical training school (on the average of 6% to 8% fewer).

Thus the training facility might need to compensate for the difference in score conversions, but the indication was that accession rates were unaffected. With that finding, some of the momentum that had built for restandardization was dissipated, especially since new AFQT forms were in final process and ASVAB-8/9/10 were nearing completion.<sup>26/</sup>

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## RECENT NORMING DEVELOPMENTS (February 1978-Present)

### Introduction

Since the Spring of 1978, there has been an increased effort on the part of the Working Group to review ASVAB-6/7 norms. Studies during this period by the Center for Naval Analysis (CNA), Air Force Human Resources Laboratory (AFHRL), and Army Research Institute (ARI) all indicated that there was a problem with the norms. All of these studies agree that the present norm tables resulted in overestimates of the ability level of applicants in the lower half of the ability range. However, the study results, some of which are still in preliminary form, do not agree on the extent of the misnorming in the lower end of the scale. An additional norming study is being conducted by Educational Testing Service (ETS). When these studies are completed, a decision on the normalization will be made.

The accuracy of the ASVAB-6/7 normalization was discussed at the May 1, 1978 meeting of the Working Group. Mr. John Mathews of AFHRL reported that his analysis of norms was underway and that the results would be available for review at the next Working Group meeting.<sup>1/</sup>

At the Working Group meeting of June 28, 1978, results from the AFHRL study and a CNA study (both described below) were presented. The minutes of that meeting note that there were discrepancies between these sets of data and current norms.<sup>2/</sup> Laboratory scientists were asked to study and evaluate these reports so that a decision about norms could be made later.

### 1978 AFHRL Study

The AFHRL study (AFHRL-1978) was conducted by John Mathews. The data for the study were obtained by administering the reference test AFOT-7A along with the operational ASVAB-6/7 to a full range sample of applicants at AFEES. Equating of the two tests was carried out using standard procedures, and a norm table was produced.

At the June 28, 1978 meeting of the Working Group, there was some discussion of these results. The major criticism was that the data might have been biased because ASVAB-6/7 was in operational use, and some applicants might have cheated on this test. The norm table that resulted from this analysis was very "hard" in that far fewer applicants would have qualified on it than on the current operational norms.

During July 1978, Dr. Eli S. Flyer, Directorate for Accession Policy, OASD(MRA&L), examined the data used in the AFHRL analysis. He reported that there seemed to be many irregularities in the data. Later, Dr. Lonnie Valentine of AFHRL discovered that some of the coded test scores from AFEES were erroneous and would require considerable search of other files for correction. The study effort was postponed because of the press of other work on production of ASVAB-8/9/10. No report was published on this analysis. For these reasons the preliminary results of this analysis were viewed with caution.

### 1978 CNA Study (CNA-1)

CNA-1, conducted by Dr. William H. Sims, was written to provide a compendium of ASVAB related work at CNA over the preceding several years and to attempt to

provide a record of the events that produced the current operational norming of ASVAB-6/7. Much of the normalization analysis in CNA-1 was actually done in the Spring of 1976 and reported in a working paper.<sup>3/</sup> This working paper provided the basis for Marine Corps input to the Working Group revision of ASVAB-6/7 norms on July 29, 1976. The CNA-1 report was made available to the Working Group on June 28, 1978.<sup>4/</sup>

The analysis in CNA-1 was based on already existing data collected for other purposes in 1970, 1974, and 1976. Since the data collection had not been designed for norming purposes, indirect methods were employed to arrive at a normalization for ASVAB-6/7. Some of the data were collected at recruit depots on ASVAB-6/7 before it became operational and hence was free of test compromise; other parts of the data were collected at AFES and may have been biased by test compromise. The reference tests used were ASVAB-3 and AFOT-7A. However, no one in the sample was administered both the reference test and ASVAB-6/7 (this would have been the preferred approach). Therefore, an intermediate test, the Army Classification Battery (ACB 73), which was administered to everyone in the sample was used as a bridge between the reference tests and ASVAB-6/7.

The conclusions from the CNA-1 study were summarized as follows:

- the original normalization of ASVAB-6/7 used from January 1, 1976 through July 29, 1976 was much too easy.
- the revised joint-Service normalization of ASVAB used from September 1976 through the present produced an AFOT score which was typically about 6 percentiles too easy in the lower percentiles and about 6 percentiles points too hard in the upper percentiles.
- the revised normalization was not based on any single analysis but represented a negotiated position between divergent analyses. This normalization was almost certainly incorrect.

The minutes of the October 31, 1978 meeting of the Working Group do not disclose any discussion of the 1978 AFHRL norming study or of CNA-1.<sup>5/</sup>

#### 1979 CNA Study (CNA-2)

By the time of the October 31, 1978 meeting of the Working Group, strong pressure had developed from within MEPCOM to produce two additional forms of the ASVAB to use concurrently with ASVAB-6/7 in an effort to reduce test compromise. The need was perceived to be urgent thus an orderly development of two completely new forms was not considered by the Working Group to be a viable option. Attention was focused on the AFQT part of ASVAB because it was viewed as being most subject to compromise. Dr. Lonnie Valentine of AFHRL presented a plan whereby the AFOT portions of several previously developed, but not operationally used, tests would be cannibalized to produce two new AFQT parts. These two parts would be joined to the non-AFQT parts of the two existing versions of ASVAB (forms 6 and 7) to make ASVAB-6E/7E.

Since the new ASVAB-6E/7E was to be used concurrently with the existing ASVAB-6/7, it was important that there be equivalent norms. The minutes of the October 31, 1978 meeting of the Working Group state: "Although there were reservations expressed by all Services concerning the equivalence of ASVAB-6E/7E to ASVAB-6/7,

it was decided that the requirement for the tests outweighed other considerations. Bill Sims will gather data on ASVAB-6E/7E, using Marine Recruits, to verify ASVAB-6E/7E equivalence with ASVAB-6/7."<sup>6/</sup> Dr. Valentine of AFHRL agreed to make the test booklets for the new ASVAB-6E/7E available to CNA as soon as possible.

Planning for the study (CNA-2) began in December 1978. On January 25, 1979, CNA received the final copies of the test booklets. Data collection began on February 15, 1979, at the Marine Corps recruit depots.

In January 1979, CNA-1 was formally distributed. In view of the questions raised by this report, OASD(MRA&L) requested that CNA expand their ongoing study of the norms of ASVAB-6E/7E to also include the operational ASVAB-6/7 to see if the results of CNA-1 could be replicated."<sup>7/</sup>

Marine Corps recruits were administered the new ASVAB-6E/7E, the current ASVAB-6/7, and a reference test, AFQT-7A. All testing was carried out at recruit depots in the Spring of 1979 and was done in standard counterbalanced fashion. The ASVAB forms were normed to the traditional WW II reference population by standard direct equating procedures using the reference test AFQT-7A.

In view of the urgent need to implement ASVAB-6E/7E and the interest in the norming question, preliminary results were briefed to the Working Group on May 3, 1979 and to the Steering Committee on May 7, 1979. The preliminary results were also published as a CNA Working Paper."<sup>8/</sup> The results of CNA-2 were briefed, although the analysis was only in preliminary form, in order to make information on ASVAB-6E/7E norms available prior to implementation. Dr. Sims believed that the CNA-2 norms were far closer to the truth than the official norm tables and that any adjustments that would be made based upon subsequent analysis would not change the major conclusions of the study.

The preliminary results from CNA-2 were summarized as follows:

- due to the similar nature of forms 6, 7, and 6E, a common AFQT conversion table could be used for all forms.
- ASVAB form 7E required a separate AFQT conversion table.
- the current normalization of the entire ASVAB series (forms 6, 7, 6E and 7E) appeared to be much too easy.
- there was a high probability that Department of Defense reports on mental aptitude of recruits were seriously in error.

There were no written minutes from the May 3, 1979 meeting of the Working Group. Dr. Sims states that his recollection is that the Working Group saw no obvious flaws in the CNA-2 analysis. However, they viewed the magnitude of the suggested changes in the normalization as so large that the results should be replicated before any changes were made in the norming tables.

Two replication studies were undertaken. One would use data collected at AFEESS and would be analysed at ARI. The other would be based on data collected in high schools and would be analysed by ETS. The expectation was that at least two of the three studies (CNA-2, ETS, and ARI) would agree and that this agreement would form the basis for correcting the norms of the operational ASVAB.

The Working Group meeting of May 3, 1979 accepted the results of CNA-2 with regard to the displacement of the ASVAB-6E/7E norms compared to those of the operational ASVAB-6/7. AFHRL was authorized by the Working Group to make adjustments in the scoring of ASVAB-7E tests so that all forms of ASVAB (6, 7, 6E, and 7E) would use the same conversion tables. The conversion tables used were those originally adopted July 29, 1976.

The two CNA studies (CNA-1 and CNA-2) both concluded that the current operational norms inflated the scores of low aptitude people but differed considerably on the magnitude of the inflation. In comparing the discrepant results of the two studies, Dr. Sims of CNA believed that the results of CNA-2 were to be preferred over those of CNA-1 because the data and analysis in CNA-2 were on balance better than those in CNA-1. He indicated that the experimental design of CNA-2 was specifically set up to provide data for normalization in contrast to the case in CNA-1 where already existing data sets were used. This better data design in CNA-2 enabled the use of a simpler, more direct normalization analysis than that used in CNA-1.

There are weak points in all analyses. For this reason, it was important to look for points of agreement between independent analyses. In the case of CNA-2, the resulting normalization agrees, in the upper percentiles, both with that from the 1976 Navy Personnel Research and Development Center (NPRDC) analysis which was used to adjust the norms in July 1976 and also with the preliminary 1979 ARI analysis. The upper part of the norm curve from CNA-1 does not agree with any other analysis and for this reason, if for no other, CNA-1 must be viewed with caution.

#### 1979 ARI-AFEES Study

In a May 18, 1979 memorandum to the Service Assistant Secretaries (MRA&L), Major General Stanley M. Umstead, Deputy Assistant Secretary of Defense (Military Personnel Policy), tasked the Services to "determine the accuracy of current AFQT norms and to take appropriate action if the norms are found to be inaccurate."<sup>9/</sup> The research plan was developed by Dr. Milton H. Maier, ARI, reviewed by Service testing psychologists, and approved by the ASVAB Steering Committee.<sup>10/</sup>

Data collection for the ARI-AFEES renorming study began on June 11, 1979 at all AFEES. AFQT-7A, which had been used by all Services from 1960 to 1973, was used as the normative reference test. ASVAB-6/7 paired with the reference AFQT-7A was administered to approximately 5,000 male applicants; an additional 5,500 applicants were administered ASVAB-6E/7E paired with the AFQT-7A. In both instances, counterbalanced test administration was employed (i.e., half the sample was administered AFQT-7A first while the other half was administered ASVAB first).

Military Enlistment Processing Command (MEPCOM) provided ARI the completed AFQT-7A answer sheets along with the ASVAB scores. ARI scored a representative sample of 1,000 AFQT-7A answer sheets and matched them to the ASVAB-6/7 AFQT scores. Analysis of these 1,000 cases provided a preliminary set of norms for the ASVAB-6/7 AFQT. These were presented to the ASVAB Working Group on July 17, 1979, and to the Steering Committee on July 19, 1979.<sup>11/</sup> The curve representing the preliminary norms, called ARI-AFEES norms, was positioned between the operational norms and the CNA-2 norms.

In August 1979, AFHRL received all the AFQT-7A answer sheets from ARI, completed scoring them, and forwarded the scores to ARI. ARI matched the AFQT-7A and

ASVAB test scores and computed norms for ASVAB-6/7. Results in the form of a conversion line showing the percentile scores that correspond to AFQT raw scores from ASVAB-6/7 were presented to the ASVAB Working Group on September 13, 1979, and to the ASVAB Steering Committee on October 5, 1979. <sup>12/</sup> The ARI-AFEES norms based on the full sample also fell between the operational norms and CNA-2 norms for the bottom half of the mental group distribution. Subsequently, norms were computed for ASVAB-6E/7E, and these tests were found to be essentially parallel to ASVAB-6/7. For the top half of the score scale, the ARI-AFEES, CNA-2, and operational norms were in close agreement.

Analyses during Fall and Winter of 1979 were directed toward evaluating factors that could cause the norming differences between ARI-AFEES and CNA-2 norms. Analyses considered the racial composition of the sample, educational level, and age, as compared to the sample used to norm the reference test (AFQT-7A) in 1959.

The percentage of blacks in the sample and the age of the examinees were found to have little effect on the norms. The effect of educational level could not be evaluated because there were insufficient numbers of high school non-graduates in the upper third of the score range. This restriction in the score range on the reference test, AFQT-7A, distorted the conversion line for non-graduates.

Analyses during early 1980 were directed toward evaluating the impact of test compromise on the norms, and developing and evaluating the accuracy of alternative conversion tables. The accuracy of the alternative norms will be evaluated by how well the current forms of the ASVAB equate to the AFQT-7A reference test. These analyses are not complete at this time.

The ARI-AFEES norms are more difficult than the operational norms in the lower half of the score scale (Mental Category IIIB, IV). Use of the ARI-AFEES norms would increase the percentage of applicants who would not qualify for enlistment.

A draft technical report is being written. It will be reviewed by the ASVAB Working Group's Psychometric Task Group in March 1980. Subsequently, it will be reviewed by external consultants and by ETS, an OASD(MRA&L) contractor, in April 1980.

The research design, which involved testing applicants at AFEES, has both advantages and disadvantages. The advantages are:

- the samples cover the full range of mental ability (including Mental Categories IV and V).
- the samples are similar in age and educational level to the sample used to construct norms for AFQT-7A.
- the examinees are motivated to do well on the ASVAB because they are applying for enlistment.
- experimental testing time is minimized since ASVAB will be administered anyway as a part of routine AFEES processing.

Disadvantages of testing applicants at AFEEES are:

- ASVAB-6/7 scores of record may be inflated by test compromise. Since forms 6E and 7E were being introduced for operational use during this study, the scores were not compromised.
- samples are self-selected; few persons with high mental ability apply for enlistment. The samples contained relatively few persons in Mental Category I.
- motivation of examinees to take the reference test (AFQT-7A) is unknown and could be low.

The ARI-AFEEES analyses are being conducted in a careful manner and subjected to intensive review. It is anticipated that major policy decisions will be based, in part, on the results. The more difficult norms determined from this analysis would increase applicant disqualification rates. Consequently, ARI is conducting analyses to confirm that ASVAB-6/7, 6E and 7E are comparable (as found in the CNA-2 study). They are also employing alternative statistical techniques (to introduce maximum rigor) to develop and evaluate results of norming.

The resulting alternative norm sets are being evaluated in terms of how accurately the AFQT from the ASVAB is equated to the reference test, AFQT-7A. Results to date indicate great similarity among the methods.

#### Norming the AFQT in High Schools

The purpose of this effort is to evaluate normalization of the AFQT from ASVAB-6/7 in a sample not affected by test compromise. The effort will be conducted by ETS.

AFQT-7A, the reference test, and the AFQT from ASVAB-7 will be administered to a sample of 3,000 male high school students in grades 11 and 12. The tests will be administered in counterbalanced order. The high schools asked to participate in this study were among those that previously participated in the DoD High School Testing Program. The study was initiated in late January 1980.

As of March 1, 1980, the sample size is about half of the goal. Additional schools are still being contacted, and ETS anticipates that the full sample can be obtained. The expected completion date is May 1980.

The primary advantage of norming AFQT in the high schools is that the tests in this sample are compromise free. The sample also is expected to cover the full range of ability. The primary disadvantage is that the sample is restricted in age and experience because all members are high school students. Students leaving school before the 11th grade are excluded. The sample is not similar to the reference population, which is more heterogeneous on many demographic variables.

The results of the high school study, taken in conjunction with earlier study results based on AFEEES applicants and recruits, will enable more accurate corrections to AFQT norms.

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# ASVAB POLICY MATTERS FOLLOWING IMPLEMENTATION OF FORMS-6/7

Direct OASD(M&RA) involvement on policy matters regarding ASVAB terminated in December 1975 when Mr. Brehm, in a December 2, 1975 memorandum to the Service Assistant Secretaries (M&RA), directed the Air Force to proceed immediately to the development of ASVAB-8/9/10.<sup>1/</sup> OASD(M&RA) staffers were, however, invited to and often attended ASVAB Working Group meetings held during 1976. In addition, after each Working Group meeting, Major W. S. Sellman (Chairman of the Working Group) and Mr. Louis A. Ruberton, Headquarters Department of the Army, briefed various OASD(M&RA) executives regarding the major ASVAB issues. For example, when the initial difficulty with ASVAB-6/7 norms (Mental Categories I and II) was identified in April/May 1976, Major Sellman and Mr. Ruberton briefed Mr. I. M. Greenberg, Acting Deputy Assistant Secretary of Defense (Manpower Requirements & Analysis) and Brigadier General R. S. Sweet, Deputy Director of Accession and Retention, OASD(M&RA) on the problem and the planned solution.

The OASD(MRA&L) policy role with respect to ASVAB changed in February 1977 when Dr. Lee J. Cronbach, a nationally known expert on psychological testing, criticized the high school ASVAB for a number of deficiencies. Dr. Eli S. Flyer, Directorate for Accession Policy, OASD(MRA&L), became directly involved in the controversy and requested the Working Group to assist in the resolution of many of the Cronbach concerns. Dr. Flyer became the OASD(MRA&L) staffer for enlisted accessions testing and a participating member of the Working Group. At the June 28, 1978 Working Group meeting, Dr. Flyer became the temporary chairman when Major Sellman was reassigned to another position.

During July 1978, discussions were held between Dr. A. J. Martin, Director for Accession Policy, and Major General Stanley M. Umstead, Deputy Assistant Secretary of Defense (Military Personnel Policy), concerning the need to reactivate the ASVAB Steering Committee, which had not met since August 1975. On August 9, 1978, an ASVAB Steering Committee meeting was held which was concerned with reestablishing the Committee, providing an historic overview of DoD mental testing, and determining who would chair the Working Group. Consistent with previous policy of using the Air Force (executive agent for the ASVAB) testing policy staffer as chairman of the Working Group, the Steering Committee appointed Major Sellman's replacement, Lieutenant Colonel C. W. Shore, to that position. General Umstead chaired the Steering Committee. Service representatives were Major General Paul S. Williams, Director of Military Personnel Management, Headquarters Department of the Army; Rear Admiral James A. Winnefeld, Assistant Chief of Naval Personnel for Personnel Planning and Programming, Bureau of Naval Personnel; Brigadier General H. L. Emanuel, Deputy Assistant Deputy Chief of Staff for Personnel for Military Personnel, Headquarters, U.S. Air Force; and Major General A. J. Poillon, Director, Manpower Plans and Policy Division, Headquarters, U.S. Marine Corps.<sup>2/</sup>

The Steering Committee met again on November 9, 1978. The discussion was largely concerned with expediting the development of ASVAB-8/9/10 replacement forms (which were to be normed to the traditional WW II mobilization population using the AFOT-7A as a reference test) and the need to norm the new ASVAB-6E/7E (needed to reduce test compromise of ASVAB-6/7).<sup>3/</sup>

During January 1979, the Center for Naval Analysis (CNA) was asked by the Steering Committee to replicate an earlier norming study finding that operational AFOT scores were not properly calibrated. That study was conducted by CNA and preliminary results reported at a May 7, 1979 Steering Committee meeting.<sup>4/</sup> Results

were significantly at variance with the first CNA study and showed a much higher discrepancy between operational AFQT scores and the reference test scores. The Steering Committee decided that more evidence was needed, and the Working Group was asked to meet this requirement. Consequently, in a May 18, 1979 memorandum, General Umstead asked the Services to "determine accuracy of current AFQT norms and take appropriate action if the norms were found to be incorrect." The Services were asked to support the Army Research Institute (ARI) which was tasked to conduct the calibration study based upon applicants tested at the AFEES.<sup>5/</sup>

On July 19, 1979, the Steering Committee heard a preliminary report on the ARI analysis of the AFEES data and directed that a corroborative study be conducted using high school students to control for the effects of possible test compromise in the norming effort.<sup>6/</sup> OASD(MRA&L) contracted with Educational Testing Service to conduct this study.

At a Steering Committee meeting on October 5, 1979, ARI reported that ASVAB norms appeared to overestimate the ability of persons in Mental Categories IIIB and IV, although this was viewed as including the effects of "some test compromise."<sup>7/</sup> This was followed by an ARI report at the Steering Committee meeting of November 20, 1979, that no corrective action was possible at this time, and that there was no adequate data base to explain existing uncertainties.<sup>8/</sup> At the January 22, 1980 Steering Committee meeting, ARI reported that a norming correction recommendation would probably be available in the Spring of 1980.<sup>9/</sup>

In the Summer of 1979, changes in the Steering Committee and Working Group occurred. In July 1979, with the military transfer of General Umstead, Dr. A. J. Martin, Director for Accession Policy, OASD(MRA&L), became chairman of the Steering Committee. Dr. Eli Flyer, who had represented OASD(MRA&L) on the Working Group, retired in August 1979. In June 1979, Dr. Milton H. Maier, Army Research Institute, was appointed executive secretary of the ASVAB Steering Committee. In that role, he was responsible for all staff actions in support of its meetings.

The ASVAB Working Group was restructured at its meeting of July 16-18, 1979. Three task groups were formed to facilitate the implementation of ASVAB-8/9/10. The task groups and their chairmen were as follows:

- Psychometrics - Dr. William H. Sims, Center for Naval Analysis.
- Printing - Major John R. Welsh, Air Force Manpower and Personnel Center.
- Policy and Forms - Mr. C. R. Hoshaw, Office of the Chief of Naval Operations.

These task groups meet independently to resolve matters of relevance, and jointly as part of the ASVAB Working Group.

Lieutenant Colonel C. W. Shore, chairman of the Working Group since August 1978 retired from the Air Force in November 1979. He was replaced as chairman in October 1979 by Lieutenant Colonel Stanley D. Stephenson. In January 1980, in order to effect closer coordination between the Steering Committee and the Working Group, Dr. Milton H. Maier, executive secretary of the Steering Committee, also assumed the chairmanship of the Working Group.

As of March 1980, the members of the ASVAB Steering Committee were:

- Dr. A. J. Martin, Director for Accession Policy, OASD(MRA&L).
- Major General J. G. Boatner, Director of Military Personnel Management, Headquarters Department of the Army.
- Rear Admiral J. R. Hogg, Director of Military Personnel and Training Division, Office of the Chief of Naval Operations.

Major General W. R. Usher, Director of Personnel Plans, Headquarters, U.S. Air Force.

Brigadier General H. S. Aitken, Director of Manpower Plans and Policy Division Headquarters, U.S. Marine Corps.

Rear Admiral T. F. Brown, Commander, Military Enlistment Processing Command.

Working Group membership included:

Lieutenant Loren W. Beigler, Office of the Chief of Naval Operations.

Major R. R. Harris, Headquarters, U.S. Marine Corps.

Mr. C. R. Hoshaw, Office of the Chief of Naval Operations.

Dr. Milton H. Maier, Army Research Institute.

Mr. Louis A. Ruberton, Headquarters Department of the Army.

Major W. S. Sellman, OASD(MRA&L).

Dr. William H. Sims, Center for Naval Analysis.

Lt. Colonel W. R. Smith, Military Enlistment Processing Command.

Lt. Colonel S. D. Stephenson, Air Force Manpower and Personnel Center.

Mr. Leonare Swanson, Navy Personnel Research and Development Center.

Dr. L. D. Valentine, Jr., Air Force Human Resources Laboratory.

Major John R. Welsh, Air Force Manpower and Personnel Center.

Dr. M. F. Wiskoff, Navy Personnel Research and Development Center.

REFERENCES

1. Assistant Secretary of Defense (M&RA) Memorandum, December 2, 1975; ASVAB Test Policies.
2. ASVAB Steering Committee Meeting Minutes, August 9, 1978.
3. ASVAB Steering Committee Meeting Minutes, November 9, 1978.
4. ASVAB Steering Committee Meeting Minutes, May 7, 1979.
5. Deputy Assistant Secretary of Defense (MPP) Memorandum, May 18, 1979; Armed Forces Qualification Test Norming Study.
6. ASVAB Steering Committee Meeting Minutes, July 19, 1979.
7. ASVAB Steering Committee Meeting Minutes, October 5, 1979.
8. ASVAB Steering Committee Meeting Minutes, November 20, 1979.
9. ASVAB Steering Committee Meeting Minutes, January 22, 1980.

## OTHER ASVAB WORKING GROUP CONCERNS

During the period covered by this report, the ASVAB Working Group was occupied with many critical and time demanding tasks, in addition to its herein documented concern with ASVAB-6/7 development and norming. Ten of these tasks have been selected as a broad representation of the total set of activities. These tasks are listed below along with a time line of Working Group involvement. The nature of each of these tasks is then briefly explained. It should be noted that involvement in these efforts, some of which were quite tangential to Working Group priority concerns of producing an adequate ASVAB testing instrument, sorely taxed individual and institutional resources. It also should be noted that nearly all of the ASVAB Working Group members had many non-ASVAB duties.

| TASK                                    | CY | 74                           | 75 | 76                           | 77         | 78         | 79 | 80 |
|---|----|------------------------------|----|------------------------------|------------|------------|----|----|
| ASVAB Validation                        |    | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |    |                              |            |            |    |    |
| Common Composites                       |    | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |    |                              |            |            |    |    |
| Congresssman Mosher Concerns            |    |                              |    | XXXXXX                       |            |            |    |    |
| Dr. Cronbach Concerns                   |    |                              |    |                              |            | XXXXXX     |    |    |
| Common Adaptability to Service Measure  |    |                              |    |                              |            | XXXXXX     |    |    |
| Motivational Attrition Prediction Model |    |                              |    |                              | XXXXXXXXXX |            |    |    |
| Assessment of Reading Ability Skills    |    |                              |    |                              |            | XXXXXX     |    |    |
| Development of ASVAB Forms 8/9/10       |    |                              |    | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |            |            |    |    |
| Alternate Forms of AFQT                 |    |                              |    |                              |            | XXXXXXXXXX |    |    |
| Vocational Interest Development         |    |                              |    | XXXXXXXXXXXXXXXXXXXXXXXXXXXX |            |            |    |    |

ASVAB Validation

Service use of a test for screening and assigning entering personnel requires detailed information concerning relationships between the tests (and various combinations of the tests) and measures of military school and job performance. The process of obtaining these relationships is called test validation and involves obtaining, for samples of military personnel, both test scores and performance measures in schools and on the job. Relatively large samples are required for these analyses (no less than 100 cases for each school and job being evaluated are desired; larger samples are better) to insure stability and accuracy of the findings. Test validation studies have been conducted by the Military Services for more than 30 years. Without the information from these studies, decisions on where to train and assign new recruits would be speculative rather than scientific.

The exceedingly rapid implementation of ASVAB-6/7 precluded the completion of validation studies prior to operational use. Accordingly, considerable effort was expended by some of the Services toward obtaining validity data on ASVAB-2/3. These prior forms of ASVAB contained some but not all of the subtests of ASVAB-6/7. After implementation of ASVAB-6/7, proper and extensive validation was conducted to ascertain: (1) which ASVAB subtests or composites had the most predictive validity in school and job assignments; and (2) to provide information from which to generate recommendations for the content of ASVAB-8/9/10.

Common Composites

Considerable interest has been expressed by OASD(MRA&L) during the past decade as to the desirability of common classification composites across the Services. This interest generated data collection efforts and cross-Service comparisons over several years. In response to a General Accounting Office recommendation

that the Services use common classification composites, OASD(MRA&L) tasked the Working Group to prepare a plan for their development. Beginning in July 1977, the Working Group developed such a plan which was submitted to OASD(MRA&L) in December 1977. After the conduct of a feasibility study by outside contractors, the Services agreed to accept three common composites for operational use with the introduction of ASVAB-8/9/10.

#### Congressman Mosher Concerns

Congressman Charles Mosher of Ohio expressed concern in late 1975 that the ASVAB testing program in high schools did not clearly inform the students that test results were used for recruiting and that personal data on tests may be used for other purposes. An additional concern was that claims were being made by MEPCOM that test results were directly usable in counseling students for civilian occupations.

Under the MOSHER agreement with the Department of Defense, action was required to change all ASVAB materials and publications used in high school testing to reflect the following:

- that the Military Services did not desire that test administration be made mandatory for all students.
- an explicit statement that the test results are used for recruiting purposes is required before testing.
- no claims or suggestions that ASVAB results are applicable to counseling for civilian jobs will be made until they can be confirmed by validation studies.
- all personal identifying information had to be removed from test result files after two years.

#### Dr. Cronbach Concerns

In February 1977, Professor Lee J. Cronbach (Stanford University), one of the country's most eminent experts on psychological testing, wrote to the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) concerning the high school ASVAB. Cronbach had several criticisms-the major one was that the high school composites were not appropriate for vocational guidance because they did not sufficiently differentiate among student abilities.

As a result of the Cronbach letter, OASD(MRA&L) asked the ASVAB Working Group to develop new high school composites and to help in the revision of the high school counseling materials to reflect the new composites.<sup>1/</sup> This project required almost full-time effort on the part of the Working Group from February 1977 through May 1977. Results of the project were implemented by MEPCOM in August 1977. Correspondence continued with Dr. Cronbach, and approximately one year later additional involvement on his part necessitated considerable effort by the Working Group to once more evaluate and revise, where appropriate, the high school counseling materials.

#### Common Adaptability to Service Measures

Over the years, each of the Military Services has sponsored work to develop background information inventories, for possible use as supplements to aptitude

measures, in predicting personal adjustment to Service. An attempt was made through the mechanism of the ASVAB Working Group in late 1977 to consolidate the various separate inventories into a single DoD instrument for operational try-out and implementation. Dissimilarities among the Service instruments, and the Army's push to go operational with its instrument precluded development of a common instrument at that time. The matter, which was placed in a "hold" status, has been reopened in 1980, and research plans are being formulated for a joint-Service adaptability instrument.

#### Validation of a Motivational Attrition Prediction Model

During the period October 1976 through July 1978, the Working Group supported an Air Force initiative to develop and validate a new statistical technique for predicting first term attrition. This support involved obtaining the approval of the Services for the project, administering an adaptability screening device to applicants of all Services, and providing accession files so that new recruits could be tracked through their first enlistment. Attrition data provided by the Working Group for each Service was matched against accession data to evaluate the several different statistical techniques under investigation.

#### Assessment of Reading Ability Skills

In October 1977, OASD(MRA&L) tasked the Air Force Human Resources Laboratory, under the auspices of the Working Group, to evaluate the capability of ASVAB to determine the reading ability of applicants for enlistment into the Services. The final product was to be the development of a reading grade index computed directly from ASVAB. Working Group members assisted in designing the study and supervised the administration of ASVAB and commercially developed reading tests to a sample of over 5,000 applicants for all Services at 25 Armed Forces Examining and Entrance Stations across the country. In addition, Working Group members participated in the analyses of the resulting data and aided in the preparation of the study report. This effort required a considerable amount of the Working Group's time from October 1977 through July 1978.

#### Development of ASVAB Forms 8, 9, and 10

In August 1975, specifications for contractual development of successor forms of the ASVAB were established with the underlying assumption that the next versions would be parallel to ASVAB-5/6/7 in length and content areas. Contractor effort was initiated in January 1976 and completed in February 1977. The effort produced tests "parallel" to Forms 5/6/7.

Later, it was decided that ASVAB-8/9/10 required considerable modification from ASVAB-5/6/7 to better handle problems experienced with those forms. Consequently, the Working Group began a lengthy process of defining a revised prototype to best meet all Service needs. This effort led to the development of the Forms 8, 9, and 10 which are slated for operational implementation in the Fall of 1980.

#### Alternate Forms of AFQT

At the April 8, 1976 Working Group meeting, Major C. Lockwood (MEPCOM) presented a report on ASVAB compromise cases and indicated that, because of compromise, new versions of AFQT subtests were needed for back-up use. It was agreed

that this back-up could be provided by August 15, 1976 subject to the understanding that these tests would be taken directly, and nearly intact from previous AFQTs and ASVABs.

By the end of July 1976, five replacement AFQTs had been prepared and were available for use through the Army Publications Distribution Center. MEPCOM subsequently modified the intended use of such back-up material. This resulted in a requirement to change the AFQTs such that (1) they would contain the same number and type of items as the AFQTs derived from the current ASVAB, and (2) their item characteristics would allow substitution for ASVAB-6/7. These modifications were made, but at considerable cost in time and effort to the Working Group.

#### Vocational Interest Development

Each of the Service personnel research laboratories has over the years developed instruments to measure the vocational interests of military applicants. In the 1974-75 time period, the research scientists who were developing ASVAB-5/6/7 were heavily engaged in studies to determine the applicability of a joint-Service interest test to meet their Service classification needs. Initial plans for ASVAB-5/6/7 called for the inclusion of Army, Navy, and Air Force interest tests, a total of 527 items in addition to the cognitive items. Considerable Working Group deliberations were involved in reducing testing time and test battery length. After time-consuming negotiations between Services, it was decided that the Army Classification Inventory (ACI) would be the sole interest measure. Additional negotiating over inclusion of the ACI in the high school version occurred in mid 1975. The issue of a joint-Service interest test was stimulated again by OASD(MRA&L) for consideration as a component of ASVAB-8/9/10. Although, the decision was reached that such inclusion was not feasible, Service test developers continue their research toward development of a joint-Service interest measure.

#### REFERENCE

1. Fischl, M. A., Ross, R. M., & McBride, J. R. Development of factorially based ASVAB high school composites. ARI Technical Paper 360. Washington, DC: Army Research Institute for the Behavioral And Social Sciences, April 1979.

APPENDIX A

REFERENCES

ORIGIN OF THE ASVAB





MANPOWER AND  
RESERVE AFFAIRS

ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

9 MAY 1974

MEMORANDUM FOR Assistant Secretaries of the Military Departments  
(Manpower and Reserve Affairs)

SUBJECT: Armed Services Vocational Aptitude Test Steering Committee

In accordance with our discussions in the Defense Manpower Policy Council meeting of May 1, 1974, this memorandum is to request your designation of a representative to the Steering Committee for the Armed Services Vocational Aptitude Test (ASVAB). Mr. Donald W. Srull will serve as chairman of the Steering Committee.

The purpose of the Steering Committee is to oversee the improvement and modification of the ASVAB in order that it may be implemented as a common test for entry into Service.

The first meeting of the Steering Committee will be held in Mr. Srull's office, Room 3D960 on Wednesday, May 22, 1974 at 2:00 p.m. The Steering Committee will initially discuss (1) formulation of a Working Group, and (2) task assignments and schedules for the Working Group.

Please furnish the name of your representative to Mr. Srull's office in advance of the meeting. The extension is Oxford 75371.

*William K. Breim*  
William K. Breim

*H. C. ...*  
*Reb. ...*

22/6



DEPARTMENT OF THE NAVY  
BUREAU OF NAVAL PERSONNEL  
WASHINGTON, D.C. 20370

IN REPLY REFER TO  
Pers-2/5-74

NOV 06 1974

MEMORANDUM FOR MAJOR GENERAL K. L. TALLMAN, USAF  
MAJOR GENERAL GEO. W. PUTNAM, JR., USA  
BRIGADIER GENERAL K. McLENNAN, USMC

Subj: ASVAB Development and Implementation

Encl: (1) Projected POA&M

1. Recent meetings and discussions concerning progress in developing ASVAB Forms 5, 6, and 7 have cast considerable doubt on prospects for full, effective implementation of the new batteries on 1 September 1975. It appears that it may be possible to commence service-sponsored administration of the new forms in secondary schools as of that date. However, there appears to be no reasonable possibility that adequate service validation can be accomplished to permit exclusive use of ASVAB 5 scores for all service selection and entry processing purposes as of 1 September 1975.

2. A projected POA&M is provided as enclosure (1). It is based on realistic estimates of the time still required to resolve significant ASVAB development problems, plus the time required for essential validation by the individual services. The POA&M has the virtue of commencing administration of the new form for high school testing on the planned 1 September 1975 implementation date, while deferring exclusive use of ASVAB results until the scores can be used with confidence for entry control and service selection processes.

3. I request that you review this proposal from the viewpoint of your service. I would appreciate your views and will attempt to accommodate any suggested changes in hopes of presenting a reasonably coordinated position at an early meeting of the ASVAB Steering Committee.

151 E. J. Carroll

**PROJECTED PROGRAM FOR SERVICE IMPLEMENTATION OF ASVAB 5, 6, OR 7  
BASED ON AVAILABLE AND PROJECTED DATA AS OF 31 OCTOBER 1974**

| <u>ITEMS</u>  | <u>MILESTONES</u>                                     |
|---|---|
| *1. PERFORM TEST ITEM ANALYSIS FOR FORMS 5, 6, AND 7 OF THE ASVAB   | COMMENCE 30 NOVEMBER 1974<br>COMPLETE 31 JANUARY 1975 |
| *2. DEVELOP FINAL TEST SCALES   | 28 FEBRUARY 1975                                      |
| *3. PRINT FINAL TEST BOOKLETS   | 31 MARCH 1975   |
| *4. PERFORM NORMATIVE (STANDARDIZATION) ANALYSIS  | COMMENCE 15 APRIL 1975<br>COMPLETE 15 JULY 1975       |
| 5. SERVICES OBTAIN ASVAB 5, 6, AND 7 TESTING SUPPLIES AND COLLECT TEST DATA ON RECRUIT SAMPLES (SIGNIFICANT SAMPLE SIZE REQUIRED TO PROVIDE EFFECTIVE COVERAGE OF RANGE OF SERVICE SCHOOLS)               | COMMENCE 1 MAY 1975<br>COMPLETE 15 JULY 1975          |
| 6. TRACK TESTED RECRUITS THROUGH VARIOUS BASIC TECHNICAL SCHOOLS, COLLECTING FINAL SCHOOL GRADES (SCHOOL PERFORMANCE), GRADUATION OF ATTRITION DATA   | COMMENCE 1 JULY 1975<br>COMPLETE 31 JANUARY 1976      |
| 7. ANALYZE COLLECTED SCHOOL PERFORMANCE DATA TOGETHER WITH TEST RESULTS FROM RECRUIT SAMPLE - THIS FUNCTION PROGRESSES IN STEP WITH SCHOOL COMPLETIONS  | COMMENCE 15 AUGUST 1975<br>COMPLETE 31 MARCH 1976     |
| 8. SERVICE SPONSORED ADMINISTRATION OF ASVAB FORM 5 IN SECONDARY SCHOOLS  | COMMENCE 1 SEPTEMBER 1975                             |
| 9. DEVELOP PROOF OF VALIDITY FOR SERVICE SCHOOL SELECTION PURPOSES AND FORMULATE SPECIFIC TEST SCORE COMPOSITES FOR EACH TECHNICAL SCHOOL   | COMMENCE 1 JANUARY 1976<br>COMPLETE 15 MAY 1976       |
| 10. DEVELOP AND/OR MODIFY ADMINISTRATIVE PROCEDURES RELATED TO RECORDING TEST RESULTS IN THE VARIOUS RECORDS OF THE SERVICE CONCERNED. REDESIGN SERVICE RECORD BOOK FORMS TO ACCEPT ALL ASVAB TEST SCORES | COMMENCE 1 FEBRUARY 1976<br>COMPLETE 15 MAY 1976      |

11. ASVAB PRODUCTION TESTING COMMENCES 1 JUNE 1976  
IN ALL SERVICES, REPLACING EXISTING  
CLASSIFICATION BATTERIES FOR ALL  
SELECTION PURPOSES

NOTE:

\*Schedule for items 1 through 4 provided by AFVTG Operations Conference  
16-17 October 1974



DEPARTMENT OF THE ARMY  
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR PERSONNEL  
WASHINGTON, D.C. 20310

DAPE-MPE-CS

13 NOV 1974

MEMORANDUM FOR: REAR ADMIRAL E. J. CARROLL, BUREAU OF NAVAL PERSONNEL  
SUBJECT: ASVAB Development & Implementation

As you requested in your memorandum of 6 Nov 1974, I have reviewed your proposal to amend the implementation of ASVAB 5, 6, and 7.

My views are as follows:

- a. The changes do not present any problems to the Army.
- b. The additional time you need will not have any significant effect on our selection and classification procedures since our operational classification battery is relatively new, gives us whatever we need, and several forms are available in the field for rotation. The only problem we have with the present ASVAB testing is in high schools because it requires supplemental testing. However, your proposal to have a new form operational for the 75-76 school year (1 Sept 75) will give us the full range of aptitudes without supplemental testing.

I believe that your proposal should be given to the ASVAB Working Group for their consideration prior to presenting it for a decision to the Steering Committee.

*George W. Palmer*

GEORGE W. PALMER  
Major General, USA  
Director of Military  
Personnel Management

2b/2x PSM.  
11 212b

Rspy *[Signature]*



DEPARTMENT OF THE NAVY  
HEADQUARTERS UNITED STATES MARINE CORPS  
WASHINGTON, D.C. 20380

NAVY OFFICE  
MPI-M7:mail  
1200/1  
8 NOV 1974

(7)

MEMORANDUM FOR MR. ADRIAN L. J. CARROLL, USMC

Subj: ASVAB Development and Implementation

Ref: a) MR. CARROLL memo PERS-2/5-74 for MR. McLENNAN  
of Nov 6 1974; same subj

1. Reference (a) indicated concern with the AFVTC Operations Conference projection of 1 September 1975 as the effective date for the implementation of ASVAB Forms 5, 6, and 7. Reference (a) further proposed that ASVAB Forms 5, 6, and 7 be implemented in the High School Testing Program on 1 September 1975 as scheduled, but that operational use of the forms be deferred until 1 June 1976.

2. The Marine Corps favors the 1 September 1975 implementation of ASVAB Forms 5, 6, and 7 for accession testing as projected by the AFVTC Operations Conference. The rationale for this position stems from the fact that since 1 July 1974, the Marine Corps has been using ASVAB Form 3 as its principal instrument for accession testing and is acutely desirous of obtaining backup tests for ASVAB-5 as early as possible.

*K. McLennan*

K. McLENNAN  
Brigadier General, U. S. Marine Corps  
Director, Manpower Plans and Policy Division  
By direction of the Commandant of the Marine Corps

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
WASHINGTON, D.C.  
20330



REF ID: A774 67

13 NOV 1974

DPXOS

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB)  
Development and Implementation (Your Ltr. 6 Nov 1974)

TO: Rear Admiral E. J. Carroll (USN)  
Assistant Chief for Personnel Planning  
and Programming  
Bureau of Naval Personnel

1. This Headquarters has carefully reviewed your letter of 6 November 1974, subject as above, and its attached Plan of Action and Milestones (POA&M).

2. As you know, the Air Force has been using ASVAB-3 as its sole enlistment/classification test since September 1973. During the past year, we have gained considerable experience with ASVAB as a production test and have validated it against a criterion of success in our technical courses. These past validation efforts will allow us to implement ASVAB-5 with considerable confidence since we will be able to compare test content across the old and new forms of the battery as well as determine the relationships of examinee performance from one version to the other.

3. We fully understand your reservations concerning the implementation of ASVAB-5 without appropriate Navy validation. One solution to your problem might be to explain your misgivings to OSD(M&RA). In this regard, a suggestion that you be allowed to continue administration of your basic classification battery along with ASVAB-5 until you have collected sufficient data to complete validation research might be appropriate. In any event, because of our previous experience with ASVAB and the OSD pressure for its early adoption as a common production test, we feel compelled to adhere to the plan for September 1975 implementation.

FOR THE CHIEF OF STAFF

*E. J. Carroll*

E. J. CARROLL, USN  
Director  
Directorate of Personnel Plans

2 b/2x

psn with school  
file



MANPOWER AND  
RESERVE AFFAIRS

ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

12 FEB 1975

*Mr. Almy for  
Mr. Brehm  
has seen  
TO Son Jui*

MEMORANDUM FOR Mr. Brehm

SUBJECT: Implementation of New ASVAB as Single Entry Test

Purpose: To obtain your decision on a revised target date for implementation of the ASVAB as a single Service Entry Test.

Discussion and Issues: Service laboratories are falling about 45 days behind the schedule to implement the new ASVAB on September 1 of this year as both the High School and Service aptitude test. (You may recall your original desire last year to have ASVAB installed in January 1975. The Services asked for a target of June, 1975 which subsequently slipped to September, 1975.)

The Service laboratories have not been as aggressive as they might have been in trying to meet the time schedule set last summer. Air Force Human Resources Lab, which is the Lead Laboratory for the new ASVAB, has fallen somewhat behind in construction of the experimental test material needed for item analysis. The most significant slippage, which cannot be made up at this time, is due to the Navy laboratory not yet beginning validation studies of ASVAB-type items. Since the other Services have done this in the past, the Navy started further behind and did not take aggressive action to "catch-up". As a result, the Navy will have to take longer for its validation studies than the current schedule permits.

Having met with policy representatives and laboratory representatives of the Services in January, I believe that their efforts are now on track. Although the Lead Laboratory (AFHRL) believes it can make up some of the slippages, it appears that October 1975 will be the earliest date on which the new ASVAB can be used operationally by the Services and





that January 1976 is the most realistic date to begin its use in the High School Testing Program. On October 1, however, the Navy would make only partial use of the new ASVAB. They would postpone use for assigning Navy enlistments in Class "A" school options (about 25% of accessions) until they complete their validation work. They expect this work to be completed not later than June 1976.

Fortunately, there seems to be no issue over use of the ASVAB as a single Service entry test; rather, the issue is one of selecting the earliest implementation date which would not compromise norming, validation, or efficient test administration.

The details of our January ASVAB Steering Committee review and discussions are in the attachment, Tab A.

Recommendations:

1. You approve October 1, 1975 as the revised date for operational use of the new ASVAB by the Services (partial Navy use) and January 1, 1976 as the revised date for use of the new ASVAB in the high schools.

2. I present a status report at the next (March) meeting of the Defense Manpower Council.



Donald W. Srull  
Deputy Assistant Secretary  
(Manpower Requirements & Analysis)

Attachment



Don -- O.K., but I don't like the delay (except what's the difference between Oct 1 and Sept 30? Or was it Sept 1? also, I thought we were already using ASVAB in the high schools. Bill 45

STEERING GROUP REPORT - STATUS OF DEVELOPMENT AND IMPLEMENTATION  
OF ARMED SERVICES VOCATIONAL APTITUDE TEST BATTERY

PURPOSE:

- (a) To report on problems in meeting the current schedule for implementation of ASVAB Forms 5, 6 and 7 as a common entry test;
- b) To discuss alternative courses of action and provide Steering Group recommendations.

DISCUSSION AND ISSUES:

This discussion covers:

- 1. Problems of the Executive Agent in meeting the current schedule
- 2. Possible revisions in the schedule; and
- 3. Alternative courses of action.

1. Problems in Meeting the Current Schedule.

The problems in meeting the current schedule for implementation on September 1, 1975, are largely occasioned by the slippages in preparation of items for the experimental test booklets used for item analysis. Under the current schedule, item analysis of 600 - 700 items was to be completed by January 31, 1975. (Service labs give each experimental sub-test to 600 or more Examinees to collect item analysis data.) Because of slippages, Service laboratories will collect data

needed for item analysis during February. The current schedule will slip about 45 days and the original schedule will slip about 75 days. The selection of 325 final test items to be included in the test battery will drop back until April and the printing of the final experimental test booklet used for norming and validation will drop back until late April or May.

The Executive Agent has not completed the contract negotiations for norming the test in the high schools. The lowest acceptable bid for this proposal was \$141,000 compared to \$95,000 programmed. Additional funding for the contract must be provided. (The contract calls for the administration of the test to 40,000 students in order to develop norms used by high school counselors.) A convenient means to provide the funds is to "draw down" on other funds made available by ASD(M&RA) to the Air Force for ASVAB development. Funds of \$82,000 were made available for comparative analysis of the ASVAB with commercial batteries; these funds could be reprogrammed for high school norming and subsequently restored.

The delay in printing the experimental test booklet not only results in postponement of the norming of the test in the high schools (assuming additional funds are made available and the contract is executed on a timely basis) but also results in postponement of Service norming and validation.

The Armed Forces Vocational Testing Group believes that it is impractical to administer the experimental test for high school norming in May. The high schools are not expected to be receptive to participation in the normative studies because of early termination dates of

some schools, final examinations, and graduation activities. The AFVTG believes that the September 1 date for implementation of the test for high school use is impractical.

The Services believe that the September 1 target for Service operational use of the ASVAB must be postponed. Service norming must now take place May 15 - August 15. Insufficient time would be available for printing and distribution of tests, manuals and answer sheets to AFES and other examining points for implementation by September 1. The Army, Air Force and Marine Corps believe that October 1 is the earliest practical date for implementation for operational use. (Test booklets, scoring keys and answer sheets would have to be delivered to AFES and other users by September 1).

The Navy requires validation of the new ASVAB forms against performance in Navy schools prior to operational use to enable determination of qualifying scores for entry into Navy Class "A" schools. The Navy laboratory has a more serious norming and validation problem because the Navy has not previously validated ASVAB sub tests against performance in Navy schools. The Army and Air Force have previously made such studies but the Navy does not believe that validation can be inferred from them because of differences in test composition and length of the different forms of the ASVAB. For this reason the Navy requirement is to give the new ASVAB experimentally in about one third of the more important Navy schools. Navy's validation plan, therefore, calls for operational use of the new ASVAB in Navy as of June 1, 1976.

## 2. Possible Revisions in the Schedule

### a. High School Testing Program

There is little latitude to accelerate development of the final experimental test booklet needed for high school norming and for Service norming and validation. Each sub-test scale will be developed by the lead laboratory (Air Force Human Resources Laboratory) as soon as item analysis data is received from Service labs but the final experimental test booklet could not be printed before late April, or May, at the earliest.

If final test scales were available April 1, accelerated contractor test administration for high school norming might be accomplished during the first two weeks in May. The first two weeks in May might be acceptable to some schools which would object to the last two weeks in May. This plan would require unusually efficient administration of all steps and would be a very optimistic schedule.

If the test is not given for high school norming during May of this school year, the earliest time that it could be given would be September-October 1975. This schedule revision would permit introduction of the new test in the high schools in January 1976.

The September implementation date could be met in the high schools if we elected to defer high school norming. The unavailability of high school norms would make the test less attractive to high school counselors,

particularly for civilian job or educational counseling; however, Service norms, except Navy's, would be available for counselor use. Many high school counselors rely on Service norms in using the present test.

b. Service Operational Use.

The maximum acceleration of the schedule would occur by printing the experimental test booklet and operational test materials concurrently. Such a schedule assumes that no previously unforeseen test construction problems came to attention during Service norming studies. The lead laboratory considers this assumption to be reasonable. Under a priority printing cycle the printed materials would not likely be available earlier than August 15. A sufficient amount of time would not be available for distribution of test materials and training of administrators at test administration sites prior to September 1 implementation. The postponement of Service operational use, at least to October 1, appears to be necessary.

3. Alternative Courses of Action.

It is convenient to discuss separately the options for the high school testing program and for Service operational use.

a. High School Testing Program

(1). It would be possible for AFVTC to approach the high schools now to see if test administration for normative purposes can be arranged for May. This course of action is disadvantageous from the stand-

point of relationships with the high schools who would be asked to provide a second testing during this school year to 40,000 students. The high school officials would not benefit directly from this cooperation. The disbenefits would be minimized, however, if the testing could be done in the first two weeks of May. This course would permit implementation in the high schools at the same time as Service operational use begins.

(2). The test could be introduced in the high schools without high school norming so as to begin high school and Service use of the test at the same time. This would not increase the usefulness of the test by high school counselors, but the disbenefits of this course of action could be minimized by deferring the normative testing until September-October, 1975, and advising the counselors that high school norms will be furnished by January 1976.

(3). The high school norming could be postponed until September-October 1975 and introduction of the test in the high schools could be postponed until the mid-school year -- January 1976. AFVTG prefers this course of action which it considers more beneficial and less disruptive to the high schools.

b. Service Operational Use.

(1). October 1 can be directed as the implementation

date for all Services. This date is not acceptable to Navy because they would have little confidence in the validation of the new test which can be accomplished during the three month period allowed for Service norming and validation. (The other Services have previously used tests which more closely resemble the new ASVAB than do the tests previously used by Navy. The other Services will rely, in part, on previous studies to complete their validation in the time allowed.)

(2). Implementation can be planned for October 1, on the basis that the Navy would make partial use of the new ASVAB. They would use the ASVAB for those who enter under general enlistments but continue to use their present tests for those who enter with specific training guarantees. After their validation studies are completed, Navy would shift to full use of the ASVAB by June 1, 1976.

(3). Operational use of the new ASVAB could be planned for all Services for June 1, 1976, thereby allowing Navy to complete its validation studies and selecting a common date to commence Service operational use.

c. Common Date For High School Testing  
and Operational Use of New ASVAB

1. It appears that the earliest common date for Service operational use and high school use is October 1, 1975, if all test materials



were in the hands of AFLEES and other users by September 1, 1975.

This date can probably be accomplished by (a) permitting Navy to use the new ASVAB for general enlistments and to use the present Navy tests for selection for "A" school training and (b) introducing the new test in the high schools without high school norms but furnishing norms by January, 1976, or earlier.

2. A second choice for a common date is to defer the implementation of the test until January 1976 when high school norms will be available. Under this choice, the Navy would make partial use of the new ASVAB until June, 1976.

3. It is also possible to defer implementation for both high school and operational use until June 1976 when the Navy plans on full use of the new ASVAB for all accessions.

### ISSUES

The issue is one of the date of implementation, particularly the "short-cuts" in validation or the risks of inefficient administration which can be accepted in order to obtain earlier implementation. The feasibility of use of the new ASVAB as a common Service entry test which meets the needs of the Services and the High School Testing Program is not an issue. There is general agreement with the acceptability of the earliest implementation date which does not compromise norming, validation or efficient test administration. The issue narrows down to how long to postpone implementation in order to provide better norming, validation or more efficient test administration.

#### SERVICE VIEWS

The Army, Marine Corps and Air Force agree that October 1, 1975 is the earliest date for operational use of the new test. Service acceptance of this date is based on the assumption that test materials would be furnished AFEES and other users by September 1. If directed to do so, the Navy would develop a plan for partial operational use of the ASVAB on this date.

The Navy is opposed to using the new ASVAB for determining eligibility for Navy school training prior to its validation in selected Navy schools. They do not have confidence in using statistical procedures for validation which the Army, Marine Corps and the Air Force plan to use. Navy would begin its validation studies in Navy schools as soon as the test booklets are available for this purpose. If validation begins May 15, 1975, performance results of the graduates of the longest courses would be available about March 1, 1976. The Navy believes that the earliest they can plan on full operational use of the new ASVAB is June 1, 1976.

The Services, in general, are more concerned with efficient operational use of the new test than with the High School Testing Program because operational testing provides the preponderant flow of their enlistments. Except for the Marine Corps view that a new test is needed because of test administration compromises of the present test forms, the Services would be willing to postpone operational use of the new test so that introduction coincides with the introduction of the new test in the high schools. The Air Force, which is the

Executive Agent for the High School Testing Program, would prefer to delay implementation in the high schools until January, 1976. The Air Force does not believe that it is realistic to try to test for development of high school norms during the first two weeks of May, 1975. They also believe that introduction of the test in high schools in October, 1975, without norms, (but to provide norms in January, 1976) would result in a negative impact on the High School Testing Program.

RECOMMENDATION:

1. To delay implementation of ASVAB until October 1, 1975, for both operational use and the High School Testing Program. This recommendation is the choice which involves least delay. It is recognized that the recommendation involves partial use of the new ASVAB by the Navy and some undesirable inefficiencies in the High School Testing Program. (It is also recognized that any further slippages would delay implementation until November 1.)

In order to plan so as to minimize the disadvantages of the recommendation, the following actions are proposed:

(1). The Navy be requested to submit a plan to ASD(M&RA) for partial use of the new ASVAB on October 1, 1975.

(2). The Air Force, as Executive Agent for the High Testing Program, be requested to submit a plan to ASD(M&RA) for use of the new ASVAB in high schools on October 1, 1975 --recommending either contract norming in the high schools in May, 1975, or use in the high schools on October 1, 1975

without high school norms--the norms to be furnished by January, 1976.

(3). The Air Force, as Executive Agent for ASVAB development should submit a detailed schedule to ASD(M&RA) of all steps, including printing and other administrative actions, which need to be completed to implement operational use on October 1. The schedule should contain actions needed, completion dates, the agency which must complete the action, and the primary action officer. The schedule should be coordinated with working group representatives of the Services as appropriate.

2. The alternative recommendation is to proceed with operational implementation on October 1, 1975, as discussed in Recommendation 1, but delay use in the High School Testing Program until January, 1976. This does not delay operational use significantly but has the disadvantages of separate implementing dates for the operational and high school programs and mid-year introduction in the high schools. The recommendation provides, however, for a more orderly introduction of the new test in the high schools than does the October 1 implementation date.

3. A third alternative is to introduce the ASVAB for operational use and use in the high school beginning June, 1976. This option involves more delay but provides for implementation in the high schools and in all the Services at the same time.



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

25 FEB 1975

MANPOWER AND  
RESERVE AFFAIRS

MEMORANDUM FOR Major General George W. Putnam, Jr., USA  
Rear Admiral E. J. Carroll, Jr., USN  
Colonel H. L. Emanuel, USAF  
Mr. Edward A. Dover, USMC

SUBJECT: Revised Planning Dates for Use of Armed Services Vocational  
Aptitude Battery (ASVAB)

Assistant Secretary Brehm has approved October 1, 1975, instead of September 1, 1975, as the revised date for use of the new ASVAB as the Single Entry Test for all Services, and he has approved January 1, 1976 as the revised date for use of the new ASVAB in the High School Testing Program.

It is recognized that the Navy will make only partial use of the new ASVAB on October 1, 1975. The Navy is requested to submit its plans for partial use of the new ASVAB on October 1, 1975, and for full use of the new ASVAB on June 1, 1976. The plans should be submitted to ASD (M&RA) by March 12, 1975.

The Air Force, as Executive Agent for development of the new ASVAB, is requested to submit a detailed schedule to ASD (M&RA) of all steps, including test development, printing and other support actions, which are needed to implement Service operational use on October 1, 1975, and for use in the High School Testing Program on January 1, 1976. The schedule should contain actions needed, completion dates, the agencies which must complete the action, and the primary action officer. The schedule should be coordinated with working group representatives of the Services, as appropriate, but particularly with the Army with respect to Armed Forces Examining and Entrance Stations (AFEES) test administration. The schedule should be submitted to ASD (M&RA) by March 19, 1975.

Donald W. Srull  
Deputy Assistant Secretary  
(Manpower Requirements and Analysis)



AF/DPXOS/Maj Cellman/wss/14Mar75/77716  
Reaccomplished/Maj Gordon/75222/lsr/15Mar75

(12)

DPXOS

17 MAR 1975

Revised Planning Dates for Use of Armed Services Vocational  
Aptitude Battery (ASVAB)

ASD(M&RA)

(M&RA)  
1. The DASD(M&RA) letter of 25 February 1975, subject as  
above, tasked the Air Force, as Executive Agent for develop-  
ment of the new ASVAB, to submit a detailed schedule of all  
steps needed for Service implementation in October 1975, and  
for use in the DOD High School Testing Program in January  
1976.

2. Attached for your consideration and appropriate action are  
the required schedules. As requested, the schedules were coor-  
dinated with working group representatives of the various  
Services, and particularly with the Army with respect to Armed  
Forces Examining and Entrance Station (AFEES) test administra-  
tion.

3. Once these schedules are approved, we will disseminate  
them to the other Services and will closely monitor each  
milestone.

FOR THE CHIEF OF STAFF

H. L. FARMER, Colonel, USAF

Deputy Director

Directorate of Personnel Plans

K. L. TALLMAN, Major General, USAF

for  
Director

Directorate of Personnel Plans

3 Atch

1. Service Implementa-  
tion of ASVAB

2. High School Imple-  
mentation of ASVAB

3. Action Agencies

COORD ON FOLLOWING PAGE

SERVICE IMPLEMENTATION OF ASVAB

Atch 1

SERVICE IMPLEMENTATION OF ASVAB  
(TEST DEVELOPMENT)

| ACTIONS NEEDED   | COMPLETION DATES | ACTION AGENCIES   | PRIMARY<br>ACTION OFFICER(S)                                       |
|--|------------------|---|--|
| 1. Experimental administration of test item pool   | 30 Apr 1975      | AFHRL<br>ARI<br>NPRDC<br>HQ MC(Code MPI-20)<br>HQ CG(G-T-1/2/62)  | Mrs. Massey<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |
| 2. Statistical item analysis of test item pool   | 15 May 1975      | AFHRL   | Dr. Valentine  |
| 3. Selection of final items and preparation of master copy test booklets   | 30 May 1975      | AFHRL<br>ARI<br>NPRDC<br>HQ MC(Code MPI-20)<br>HQ CG(G-T-1/2/62)  | Mrs. Massey<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |
| 4. Administration of test to recruits in the various Services and to AFES input to obtain lower ability men (normative data across all ability ranges) | 30 Jul 1975      | AFHRL<br>ARI<br>NPRDC<br>HQ MC(Code MPI-20)<br>HQCG (G-T-1/2/62)  | Mrs. Massey<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |
| 5. Statistical analysis of Service normative data and preparation of conversion tables   | 20 Aug 1975      | AFHRL<br>ARI<br>NPRDC<br>HQ MC(Code MPI-20)<br>HQ CG (G-T-1/2/62) | Mrs. Massey<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |



SERVICE IMPLEMENTATION OF ASVAB  
(PRINTING AND PUBLICATIONS SUPPORT)

| <u>ACTIONS NEEDED</u>  | <u>COMPLETION DATES</u> | <u>ACTION AGENCIES</u>                             | <u>PRIMARY ACTION OFFICER(S)</u>         |
|--|-------------------------|--|--|
| 1. Preparation of administrative and scoring manuals, and master copy test booklets                | 15 May 1975             | AFHRL  | Mrs. Massey                              |
| 2. Submission to HQ USAF/DAPQ of master copy test booklets, and administrative and scoring manuals | 30 May 1975             | AFHRL<br>HQ USAF/DPXOS                             | Mrs. Massey<br>Major Sellman             |
| 3. Publication of test booklets for Service norming  | 30 Jun 1975             | AFHRL<br>Defense Print-<br>ing Plant,<br>Kelly AFB | Mrs. Massey<br><br>Mr. Haas              |
| 4. <u>1/</u> Printing and distribution of test booklets and related materials                      | 1 Aug 1975              | HQ USAF/DAPQ<br>HQ USAF/DAPS                       | Mr. Miller<br>Mr. Frazier                |
| 5. Submission of conversion tables to Services for publication and distribution                    | 20 Aug 1975             | AFHRL  | Mrs. Massey                              |
| 6. <u>2/</u> Distribution of test booklets and related materials to test administrators            | 1 Sep 1975              | HQ USAF/DAPS<br>DAPE-MPE-CS<br>BUPERS(Pers 55)     | Mr. Frazier<br>Mr. Ruberton<br>Cdr Perry |

1/ OASD(M&RA) to determine source of funds for printing ASVAB and related materials.

2/ Army will coordinate Marine Corps distribution requirements for use at AFES.

| <u>ACTIONS NEEDED</u>   | <u>COMPLETION DATES</u> | <u>ACTION AGENCIES</u>  | <u>PRIMARY ACTION OFFICER(S)</u>                                     |
|---|-------------------------|---|--|
| 7. Service publication and distribution of conversion tables  | 15 Sep 1975             | ATC/RS<br>ARI<br>NPRDC<br>HQ MC (Code MPI-20)<br>HQ CG (G-T-1/2/62) | Capt Scoville<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |
| 8. <u>3/</u> Implementation of ASVAB  | 1 Oct 1975              | All Services  |  |
| <u>3/</u> Army and Marine Corps to administer ASVAB in AFEEs; Navy and Air Force to continue present test administration practices. |                         |   |  |

HIGH SCHOOL IMPLEMENTATION OF ASVAB

2ch 2

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# HIGH SCHOOL IMPLEMENTATION OF ASVAB (COMPUTER SUPPORT)

| <u>ACTIONS NEEDED</u>  | <u>COMPLETION DATES</u> | <u>ACTION AGENCIES</u>   | <u>PRIMARY<br/>ACTION OFFICER(S)</u>                               |
|--|-------------------------|--|--|
| 1. Agreement on hardware support system  | 1 May 1975              | AFVTG  | Col Rodeen   |
| 2. Negotiation of contract for high school norming   | 1 May 1975              | AFVTG<br>AFHRL   | Capt Wiley<br>Mr. Ree  |
| 3. Design of student answer card and submission to HQ USAF/DAPQ for publication            | 1 May 1975              | AFVTG<br>HQ USAF/DPXOS   | Col Rodeen<br>Major Selman   |
| 4. Submission to ATC/AC of Data Automation Request (DAR) for program support system        | 1 Jun 1975              | AFVTG  | Col Rodeen   |
| 5. Delivery of Service composite formats to AFVTG  | 1 Jun 1975              | AFHRL<br>ARI<br>NPRDC<br>HQ MC(Code MPI-20)<br>HQ CG(G-T-1/2/62) | Mrs. Massey<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |
| 6. Submission of revised answer card layout to contractor                                  | 15 Jun 1975             | HQ USAF/DAPS   | Mr. Frazier  |
| 7. Delivery of Service scoring formulae and conversion tables to AFVTG                     | 30 Aug 1975             | AFHRL<br>ARI<br>NPRDC<br>HQ MC(Code MPI-20)<br>HQ CG(G-T-1/2/62) | Mrs. Massey<br>Dr. Fischl<br>Mr. Swanson<br>Mr. Dover<br>Mr. Cowan |
| 8. Delivery of high school norming package based on Service samples to AFVTG (backup only) | 30 Aug 1975             | AFHRL  | Dr. Valentine  |

| ACTIONS NEEDED   | COMPLETION DATES | ACTION AGENCIES     | PRIMARY   |  |
|--|------------------|---------------------|---|--|
|  |                  |                     | ACTION OFFICER(S)   |  |
| 9. Delivery of answer cards to Service Publication Distribution Offices (PDOs) | 1 Oct 1975       | HQ USAF/DAPS        | Mr. Frazier   |  |
| 10. Completion of computer program (less high school norm portion)             | 15 Oct 1975      | ATC/AC<br>AFVTG     | Capt Guenther<br>Col Rodeen   |  |
| 11. Collection of high school normative data                                   | 30 Oct 1975      | AFHRL<br>Contractor | Mr. Ree   |  |
| 12. Analysis of high school data and development of conversion tables          | 30 Nov 1975      | AFHRL<br>Contractor | Mr. Ree   |  |
| 13. Delivery of high school norm portion of computer program to AFVTG          | 30 Nov 1975      | AFHRL               | Dr. Valentine   |  |
| 14. Final system edits   | 15 Dec 1975      | AFVTG               | Col Rodeen  |  |
| 15. Distribution of answer cards to field test administrators                  | 1 Jan 1976       | Service PDOs        | USA - Mrs. Ritter<br>USN - Mrs. Greenberg<br>USAF - Mr. Williams<br>USMC - Mrs. Tate<br>USCG - Mr. Soto |  |

HIGH SCHOOL IMPLEMENTATION OF ASVAB  
(PRINTING AND PUBLICATIONS SUPPORT)

| ACTIONS NEEDED   | COMPLETION DATES | ACTION AGENCIES                               | PRIMARY<br>ACTION OFFICER(S)  |
|--|------------------|---|---|
| 1. Preparation of final master copy of all materials except test copy and test administrator (TA) instructions | 1 May 1975       | AFVTG   | Lt Col Kellogg  |
| 2. Submission to HQ USAF/DAPQ of master copy of all materials except test copy and TA instructions             | 15 May 1975      | AFVTG<br>HQ USAF/DPXOS                        | Lt Col Kellogg<br>Major Sellman   |
| 3. Preparation of administrative and scoring materials, and master copy test booklets                          | 15 May 1975      | AFHRL   | Mrs. Massey   |
| 4. Submission to HQ USAF/DAPQ of master copy test booklets and administrative and scoring manuals              | 30 May 1975      | AFHRL<br>HQ USAF/DPXOS                        | Mrs. Massey<br>Major Sellman  |
| 5. Publication of test booklets for Service norming  | 30 Jun 1975      | AFHRL<br>Defense Printing Plant,<br>Kelly AFB | Mrs. Massey<br>Mr. Haas   |
| 6. Shipping of all materials to Service PDOs   | 15 Oct 1975      | HQ USAF/DAPS                                  | Mr. Frazier   |
| 7. Distribution of all materials to field test administrators (TAs)  | 1 Dec 1975       | Service PDOs                                  | USA-Mrs. Ritter<br>USN-Mrs. Greenberg<br>USAF-Mr. Williams<br>USMC-Mrs. Tate<br>USCG-Mr. Soto |
| 8. Distribution of all materials to high school counselors   | 1 Jan 1976       | Service TAs                                   |   |

HIGH SCHOOL IMPLEMENTATION OF ASVAB  
(TEST ADMINISTRATION)

| <u>ACTIONS NEEDED</u>  | <u>COMPLETION DATES</u> | <u>ACTION AGENCIES</u>  | <u>PRIMARY<br/>ACTION OFFICER(S)</u>                                  |
|--|-------------------------|---|---|
| 1. Service agreement on test administration procedures required for field level administration | 1 Jun 1975              | ATC/RS<br>NRC<br>USAREC<br>HQ MC(MMRE-2)<br>HQ CG(G-T-1/2/62) | Col Womack<br>Capt Norman<br>Mr. House<br>Capt Clancy<br>Lt(jg) Horan |
| 2. Development of revised test administrator training programs                                 | 1 Jul 1975              | AFVTG   | Col Rodeen  |
| 3. Distribution of revised AFVTG Procedures Manual   | 30 Nov 1975             | AFVTG   | Col Rodeen  |
| 4. Complete test administrator retraining  | 30 Dec 1975             | AFVTG   | Col Rodeen  |

ACTION AGENCIES

atoh 3

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ACTION AGENCIES

IR FORCE

HQ USAF/DPXOS

Classification and Evaluation Standards Branch  
Directorate of Personnel Plans  
HQ U.S. Air Force  
Washington, DC 20330  
Autovon 227-7716

HQ USAF/DAPS

Publishing Systems Management Branch  
Publishing Division  
Directorate of Administration  
HQ U.S. Air Force  
Washington, DC 20330  
Autovon 222-9200

HQ USAF/DAPQ

Procurement and Requirements Branch  
Publishing Division  
Directorate of Administration  
HQ U.S. Air Force  
Washington, DC 20330  
Autovon 286-2316

ATC/RS

USAF Recruiting Service  
Randolph AFB, Texas 78148  
Autovon 487-5557

ATC/AC

Comptroller, Data Automation  
Air Training Command  
Randolph AFB, Texas 78148  
Autovon 487-3343

AFHRL

Air Force Human Resources Laboratory  
Lackland AFB, Texas 78236  
Autovon 473-2807

AFVTG

Armed Forces Vocational Testing Group  
Randolph AFB, Texas 78148  
Autovon 487-2236

ARMY

DAPE-MPE-CS

Classification and Standards Branch  
Enlisted Division  
Director of Military Personnel Management  
HQ U.S. Army  
Washington, DC 20310  
Autovon 225-2477

**USAREC**

U.S. Army Recruiting Command  
Ft. Sheridan, Illinois 60037  
Autovon 459-2563

**ARI**

Army Research Institute for the Behavioral  
and Social Sciences  
1300 Wilson Boulevard  
Arlington, Virginia 22209  
Autovon 224-4020

**NAVY**

BUPERS (Pers 212d) Enlisted Plans and Programs Branch  
Personnel Planning and Programming Division  
Bureau of Naval Personnel  
Washington, DC 20370  
Autovon 224-1614

BUPERS (Pers 55) Classification and Accessions Division  
Bureau of Naval Personnel  
Washington, DC 20370  
Autovon 224-1730

**NRC**

Navy Recruiting Command  
4015 Wilson Boulevard  
Arlington, Virginia 22203  
Autovon 222-4789

**NPRDC**

Naval Personnel Research and Development Center  
271 Catalina Boulevard  
San Diego, California 92152  
Autovon 933-2283

**MARINE CORPS**

HQ MC (Code MPI-20) Manpower Management Information Systems Branch  
Manpower Plans and Policy Division  
HQ U.S. Marine Corps  
Washington, DC 20380  
Autovon 224-4165

HQ MC (Code MPRE-2) Enlisted Recruiting Branch  
Manpower Management Division  
HQ U.S. Marine Corps  
Washington, DC 20380  
Autovon 224-2687

**COAST GUARD**

HQ CG (G-T-1/2/62) Psychological Research Branch  
Planning and Evaluation Staff  
Office of Personnel  
HQ U.S. Coast Guard  
400 7th Street, SW  
Washington, DC 20590  
Commercial - Area Code 202 - 426-0890

MEMORANDUM OF AGREEMENT

Meeting on the development and implementation of the Armed Services Vocational Aptitude Battery (ASVAB) as a single test for entry into Service and for use in the DOD High School Testing Program. (13 March 1975)

Attendees representing concerned agencies within the Army, Navy, Air Force, Marine Corps, and Coast Guard reviewed and coordinated the plan of ASVAB implementation developed by HQ USAF/DPXOS at the behest of OASD(M&RA). The plan identified actions necessary for implementation, their completion dates, the agencies which must complete the action, and the primary action officer.

Army

DAPE-MPE-CS Louis G. Ruben

USAREC Mr. Knudsen, telecon 10 Mar 75 re AFEES

ARI W. Lischel

Navy

BUPERS (Pers 212d) W. J. Quinn

Navy Recruiting Command Edward E. Ebb

NPRDC Mr Swanson, telecon, 11 Mar 75

Air Force

HQ USAF/DPXOS Wayne S. Ellman

HQ USAF/DAPS Walter S. Kruger

HQ USAF/DAPQ Ed Miller

ATC/RS Col Aldrich, telecon 14 Mar 75: Capt Scoville, telecon 14 Mar 75

ATC/AC Captain Guenther, telecon 13 Mar 75

AFHRL Lennie H. Valentini, Jr.

AFVTG Samuel J. King

AFVTG Samuel J. King

Marine Corps

HQ Marine Corps (Code MPI-20)

Edward A. Over

HQ Marine Corps (Code MMRE-2)

" " " (Capt Chang OK'd)

Coast Guard

HQ Coast Guard (G-T-1/2/62)

Harry (Lang)  
William J. Hogan



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

9 APR 1975

43)

MANPOWER AND  
RESERVE AFFAIRS

MEMORANDUM FOR Major General K. L. Tallman  
Director Personnel Plans  
Department of the Air Force

SUBJECT: Revised Planning Dates for Use of Armed Services  
Vocational Aptitude Test Battery (ASVAB)

The planning dates submitted in your memorandum of March 17, 1975 on this subject are approved.

I would appreciate your furnishing copies of the schedule to other members of the Steering Group, as mentioned in your memorandum.

The issue of the source of funds for printing ASVAB and related materials will be discussed at the next meeting of the Steering Group.

It would be very helpful, in connection with your monitoring each milestone, for you to send me a brief status report as of June 1, 1975, and bi-monthly thereafter, and at such other times as you consider action by this office to be needed to meet the milestone dates.

Donald W. Srull  
Deputy Assistant Secretary  
(Manpower Requirements & Analysis)



DEPARTMENT OF THE NAVY

BUREAU OF NAVAL PERSONNEL

WASHINGTON, D.C. 20370

Pers-212d/jlr

1510

Ser 246/75

MAR 18 1975

MEMORANDUM FOR THE DEPUTY ASSISTANT SECRETARY OF DEFENSE  
(ASD/M&RA)

Subj: Navy plan for partial use of the new ASVAB

Ref: (a) ASD/M&RA memo of 25 FEB 75

1. In response to reference (a), the following is presented as a plan for partial use by Navy of the new ASVAB as a Service Entry Test.
2. Commencing 1 October 1975 Navy will accept for enlistment any applicant with a qualifying ASVAB VI/VII score acquired incident to testing by another Service. Navy will continue to rely on the Basic Test Battery for enlistment, classification, and assignment decisions relative to its Nuclear and Advanced Electronics/Technical fields, and in addition will continue to use qualifying ASVAB II/IV scores in other school assignments where scores are available. Concurrently, and Beginning about 10 June 1975, Navy will conduct a program of validation for the new ASVAB as a predictor of school performance. This study is expected to be fully completed by 1 June 1976. On 1 June 1976, Navy expects to make full use of ASVAB as the Single Entry Test, and, on the basis of completed validation, to make personnel assignments to technical training.
3. Successful implementation of this plan by Navy is dependent upon two important considerations. The test developmental schedule provided by Air Force must be met and, because there is absolutely no margin for slippage in that schedule, any delays will directly impact on Service implementation. Secondly, validation studies by Navy must demonstrate the new ASVAB to be valid for Navy use in personnel classification and assignment.

H. E. J. Carroll

Ref A

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

9 APR 1975

MANPOWER AND  
RESERVE AFFAIRS

MEMORANDUM FOR Rear Admiral E. J. Carroll  
Assistant Chief of Naval Personnel,  
Personnel Planning and Programming

SUBJECT: Navy Plan for Partial Use of the New ASVAB

Your memorandum of March 18, 1975, on this subject indicates that beginning October 1975, the Navy will accept applicants with a qualifying ASVAB VI/VII score acquired incident to testing by another Service, except in nuclear and advanced/technical occupational fields. In addition, the Navy would not plan to administer the ASVAB itself until validation is completed in June, 1976.

For many reasons, it would be preferable to have the Navy administer the new ASVAB in at least those fields for which a new ASVAB score on a test administered by one of the other Services is acceptable.

I recognize that there is some disadvantage to your test administrators in administering both the Basic Test Battery and the new ASVAB; however, it would be useful to have your views as to whether there is some acceptable method by which you could accomplish this.

*Don S.*

Donald W. Snull

Deputy Assistant Secretary  
(Manpower Requirements & Analysis)



*Ref B*

DEPARTMENT OF THE NAVY

BUREAU OF NAVAL PERSONNEL

WASHINGTON, D.C. 20370

Pers-212d/jlr

1510

Ser 357/75

25 APR 1975

MEMORANDUM FOR THE DEPUTY ASSISTANT SECRETARY OF DEFENSE (M&RA)

Subj: Implementation of the new ASVAB

Ref: (a) Pers-2 Memo Pers-212d/jlr Ser 246/75 of 18 MAR 75  
(b) ASD/M&RA memo of 9 APR 75

1. Reference (a) provided a Navy plan for partial use of the new ASVAB during an interim period of 1 October 1975 through 31 May 1976. This plan is predicated on continued testing by Navy with the Basic Test Battery (BTB) until 1 June 1976 in order to ensure that, in the absence of ASVAB 5/6 validation, proper quality selection for Navy technical training will be retained. Reference (b), while recognizing Navy interest in continued BTB use, asks for Navy views as to some acceptable method by which both the BTB and the new ASVAB could be administered.

2. Until adequate validation is achieved, ASVAB 5/6 test scores will qualify the Navy applicant for enlistment only, to the same extent as ASVAB 2 scores acquired via the High School Testing Program. The prime Navy recruiting incentive today for high quality applicants is guaranteed assignment to a technical school. These guaranteed assignments cannot be made on the basis of an unvalidated ASVAB test battery. Administration of the BTB would thus be necessary to screen the best qualified candidates and the ASVAB results would serve no useful purpose. The investment of time, effort, and money to administer two long test batteries does not appear warranted.

3. In summary, Navy intends to make all possible speed in adopting the ASVAB as the single recruit production and classification test vehicle. There appears to be no benefit gained by premature administration of the ASVAB before it is validated. The time and expense involved clearly militates against dual testing. Therefore, Navy reaffirms the plan set forth in reference (a).

*D. L. Freeman*

D. L. FREEMAN

Deputy Chief of Naval Personnel

Copy to:

CNRC

VCKO

ASN(M&RA)

*Ref C*





ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

*Pers 2*

MANPOWER AND  
RESERVE AFFAIRS

9 JUN 1975

MEMORANDUM FOR The Assistant Secretary of the Navy  
(Manpower & Reserve Affairs)

SUBJECT: Enlisted Accession Processing

References: (a) Pers-2 memo PERS-212d/jlr Ser 246/75 of 18 Mar 75  
(b) ASD/M&RA memo of 9 Apr 75  
(c) Pers-2 memo PERS-212d/jlr Ser 357/75 of 25 Apr 75  
(d) ASD/M&RA memo of 9 June 1975

*Attache  
in C*

Implementation of the ASVAB as the common DoD enlistment test is a necessary step to improve the management of the mental testing process for enlistment applicants. The memorandum cited in reference (d) conveys my decision to make the AFJES responsible for the central management of enlistment testing effective 1 January 1976, and to require that the ASVAB be administered to all non-prior service applicants starting on 1 October. The use of the ASVAB as a common DoD test will also facilitate the administration of the post-enlistment verification procedures discussed in this memo.

As you know, our original target date of 1 July 1975 was changed to 1 October 1975. I recognize that the new target date accelerates the Navy's current plan to wait until 1 June 1976 before using the ASVAB. I also understand your concern regarding validation of the ASVAB test for Navy's use. Therefore, I have no objection to the Navy administering the Basic Test Battery (BTB) concurrently with the ASVAB during the 1 October 1975 to 1 January 1976 period for all Navy non-prior service applicants. Further, I have no objection to concurrent testing for Navy applicants to the 6 year programs (nuclear field, advanced electronic fields and advanced technical fields) continuing during the 1 January 1976 to 1 June 1976 period. This limited period of testing overlap will permit the completion of ASVAB validation for the Navy.

*William K. Brehm*

William K. Brehm



43

ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

OFFICE OF THE  
DEPARTMENT OF DEFENSE

31 JUL 1975

MEMORANDUM FOR Assistant Secretaries of the Military Departments  
(Manpower and Reserve Affairs)

SUBJECT: Enlisted Accession Processing

I refer to my memorandum of 9 June 1975 concerning the use of the ASVAB as a common DoD aptitude test for enlistment in the Armed Services. In view of the delays experienced in publishing the revised editions of the ASVAB, I am changing the implementation date from October 1975 to 1 January 1976. The new implementation date will therefore coincide with the date on which we will consolidate all mental testing under the AFLES.

In order to assure that the AFLES is ready to go operation with the ASVAB by 1 January 1976, action should be taken to assure printing and distribution of the tests to the CG AFLES by 1 December 1975.

William K. Beckman

William K. Beckman



(19)  
Pers-212b/cw  
1510  
Ser 779/75

14 Oct 75

MEMORANDUM FOR COMMANDER, NAVY RECRUITING COMMAND

Subj: Enlisted Accession Testing

Ref: (a) CNRC memo Code 211 Ser 3530 of 3 Sep 75

1. Pursuant to OSD direction, Navy will commence full use of the new ASVAB beginning 1 January 1976. All Navy enlisted accessions will be enlisted on the basis of an ASVAB score achieved by way of a test administered in high school, at an AFES or by a Mobile Examining Team operating under AFES control. The Navy basic Test Battery will no longer be administered for purposes of enlistment or classification. Subsequent to 1 January 1976, specific guidance pertaining to recall or destruction of the BTB will be promulgated. Special handling and test accountability procedures therefore continue in effect until further notice. Qualifying ASVAB scores to guarantee an OCCSPEC or specific school program seat will be provided you prior to the 1 January 1976 implementation date for ASVAB 5/6/7.

2. The results of recent Recruiting Command manpower cuts cited in reference (a) are noted, and the expected impact such cuts may have on your capability for supplemental testing is acknowledged. There will continue to exist, however, a requirement for some supplemental testing program guarantees, most notably in the Nuclear Field. In particular, the Nuclear Field Validation Test and the Foreign Language Aptitude Test must necessarily be administered. Given selectively to only those applicants motivated and ASVAB qualified for either the Nuclear Field or the CTI Rating, the amount of special testing required at the point of recruitment should be minimal.

*James D. Watkins*

Blind Copy To:  
Pers-55

Prepared by:  
LCDR LARRY BEGUIN (2s/212d  
Rm. 2634, X41614  
Typed: 16 Sep 75  
Tina Webster



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

(20)

MANPOWER AND  
RESERVE AFFAIRS

2 DEC 1975

MEMORANDUM FOR Assistant Secretaries of the Military Departments  
(Manpower and Reserve Affairs)

SUBJECT: ASVAB Test Policies

Under the centralized testing system, ASVAB 6 and 7 will be administered only at the AFEES starting 1 January 1976. One of the scrambled versions of ASVAB 6 or 7 may be used for in-service testing purposes. ASVAB 3 or current Service tests will continue to be used for Reserve and National Guard applicants who are not tested at AFEES with ASVAB 6 and 7. Enlistment eligibility established by ASVAB 5, 6 or 7 will be valid for a period not to exceed a year from the date of test administration.

Retests with ASVAB 6 and 7 are authorized six months following the initial test with ASVAB 5, 6 or 7. Exceptions may be made 30 days after the initial test when the Recruiting Commander in grade of Major or above personally determines that the initial test scores may not reflect the true capability of an applicant. Services, other than the one authorizing the exception, may reserve the right to accept the original test scores for enlistment purposes. However, any additional retests cannot be authorized until 6 months after the latest retest accomplished by AFEES.

Immediate retest of an applicant is authorized if, in the opinion of the AFEES commander, there is reason to suspect the test results; the applicant becomes sick during testing; or for some obvious reasons, the AFEES test administrator determines that the applicant is in no condition to take the mental test.

ASVAB 5 will be implemented in high schools and replace ASVAB 2, no later than 1 March 1976.

*William K. Breckin*

William K. Breckin



APPENDIX B

REFERENCES

DEVELOPMENT AND INITIAL  
NORMING OF THE ASVAB

(1)

5 Jun 74

PLAN FOR ARMED SERVICES VOCATIONAL APTITUDE BATTERY  
(ASVAB) FORMS 5 AND 6

At the <sup>5</sup> Jun 74 meeting of the ASVAB Working Group, development of a test plan, taking account of the needs of the various services, was identified as the first critical step in the ASVAB revision cycle preparatory to implementation as a "common" core battery. This paper outlines a proposed plan. Proposed content areas, numbers of items, and estimated testing times are shown in the table below. Descriptive notes following the table elaborate on content, and explain how the various service requirements are covered. The second section of this paper deals with appropriateness of milestone dates, availability of needed materials for the revision, appropriate R & D support, required resources if the effort is to be accomplished in a timely manner, and constraints associated with the effort.

TEST PLAN

Test Outline

| <u>CONTENT AREA</u>        | <u>NUMBER<br/>OF ITEMS</u> | <u>ESTIMATED<br/>TESTING TIME</u> |
|----------------------------|----------------------------|-----------------------------------|
| 1. Attention to Detail     | 30                         | 5 min.                            |
| 2. Numerical Operations    | 20                         | 10 min.                           |
| 3. Word Knowledge          | 25                         | 10 min.                           |
| 4. Arithmetic Reasoning    | 20                         | 20 min.                           |
| 5. Space Perception        | 25                         | 15 min.                           |
| 6. Mathematics             | 25                         | 15 min.                           |
| 7. Electronics Information | 25                         | 10 min.                           |

if forms beyond the initial two are to be produced on a timely basis.

(c) Joint Service Support - It is imperative that, if the battery is to satisfy the needs of all of the services, tryout samples contain representation from across the services. Service support in expeditious collection of their samples when material is available is critical.

|                             |      |         |
|-----------------------------|------|---------|
| 8. Radio Information        | 15   | 10 min. |
| 9. Mechanical Comprehension | 25   | 15 min. |
| 10. General Science         | 30   | 15 min. |
| 10(a) Physical              | (15) |         |
| 10(b) Biological            | (15) |         |
| 11. Shop Information        | 25   | 10 min. |
| 12. Automotive Information  | 25   | 13 min. |
| (Total time = 149 min.)     |      |         |

#### BOOKLET II

|   |     |         |
|---|-----|---------|
| 13. Vocational-Occupational Interest<br>Choice Exam (VOICE) | 250 | 25 min. |
| (Total time = 25 min.)                                      |     |         |

#### BOOKLET III

|  |     |         |
|--|-----|---------|
| 14. General Information                          | 10  | 7 min.  |
| 15. Classification Inventory                     | 87  | 20 min. |
| 16. Navy Vocational Interest<br>Inventory (NVII) | 190 | 45 min. |
| (Total time = 72 min.)                           |     |         |

#### Test Descriptions

(1) Attention to Detail - a measure of clerical speed and accuracy which is contained in the current Army Classification Battery. This is proposed as an alternative to the present Coding Speed test which requires half again as much testing time as does Attention to Detail.

(2) Numerical Operations - Army and Navy both use mathematics tests in their current batteries; the Air Force's AQE contained Numerical Operations (Speeded), and such would still be desirable for Air Force use. Examination of the Army and Navy mathematics tests indicates that a few of the items



in the Navy test are numerical operations (i.e., simple computation of an answer via specified mathematical processes) and that a number of the Army items are also of this type. This scale could be combined with the other mathematical scales by the services with whatever weights were appropriate for their need.

(3) Work Knowledge - Involves knowledge of word meanings. This has been a standard part of all the service classification batteries and of the ASVAB.

(4) Arithmetic Reasoning - presents reasoning problems involving arithmetic processes. This type of item has been a standard part of the service classification batteries and of the ASVAB.

(5) Space Perception - This also has been a standard part of service classification batteries and of the ASVAB. This is a pictorial test. In each item, a flat pattern, with dotted lines showing where folds are to be made. The subject selects the drawing of a three-dimensional figure which would be formed by folding the pattern.

(6) Mathematics - This test would consist of algebraic and geometric items of the type contained in the present Army and Navy mathematics tests. As in those tests, most items would involve algebraic equations. This test in conjunction with the Numerical Operations test could replicate the variance of the Army and Navy mathematics tests.

(7) Electronics Information - to consist of questions involving elementary principles of electricity and electronics. This has been a standard part of the service classification batteries and the ASVAB.

Approximately half the items in the Navy's Electricity and Radio test are of this type; thus, this test (or a subset of items from it) can be combined with the next test to duplicate that Navy test.

(8) Radio Information - this test would consist of items like those from the Navy's Electricity and Radio test which deal with radio. Fifteen of the items in the Navy test are of this type. In combination with a portion of test 7 above, this should replicate the Navy test.

(9) Mechanical Comprehension - presents drawings of mechanical devices about which questions, requiring ability to understand mechanical principles, are asked. This type test is a standard part of the various service classification batteries and of the ASVAB.

(10) General Science - inclusion of this test is based on both Army and Navy needs for a science measure in the battery. In the ETST, there is a science test which is exclusively concerned with the physical sciences; the Army's science test is concerned with biological sciences. It is proposed that these be combined into one test (General Science) with provision for separate scoring of the physical and biological science items. As a practical matter, the two types of items should be interspersed on the basis of difficulty to assure that all subjects take some of each item type during the test's allotted time.

(11) Shop Information - items concern shop procedures and the use of tools. This has long been a part of service batteries and of ASVAB.

(12) Automotive Information - This, too, has been a part of the various service classification batteries and of the ASVAB. Items may

range from those requiring rather technical experience and knowledge re auto repair to those requiring general understanding and recognition of symptoms of various malfunctions. It is proposed that more of the more general questions be used than in earlier ASVAB's; this is recommended to allow a subset of the items to be scored for use with test 14 below in reproducing the Army's General Information scale.

(13) VOICE - Each of the services has developed an interest test which it wished to have included in the battery. The 250 item VOICE constitutes a subset of the Air Force instrument. The instrument yields 13 homogeneous scale scores; these were developed to secure greater reliability than would be obtained from single items. These scales have been validated in terms of their ability to separate "satisfied" workers in job areas from both dissatisfied workers and from men in general. Composites of these scales are used to identify interest (defined in terms of job satisfaction and group difference from other satisfied occupational groupings). It is believed that the criteria against which scoring for this instrument was developed make it more appropriate for school counselor use. Army and Navy interest tests are also included as tests 15 and 16. It is recommended that these two tests, along with a brief General Information test, be printed in a supplementary booklet for AFEEES administration to applicants for enlistment only.

(14) General Information - Inspection of the Army General Information test shows it to be mainly automotive with a few other items dealing with recreational activities and firearms. It is proposed that this scale

consist only of the non-automotive items of the Army scale; a subset of items from the Automotive Information test can be scored for use with this scale to replicate the Army test.

(15) Army Classification Inventory - the Army inventory as is.

(16) Navy Vocational Interest Inventory - The Navy instrument as is.

#### Battery Arrangement and Administration

It is proposed that tests be arranged in the order shown above. Tests 1 through 12 should constitute Booklet I (This could be arranged for a brief break at the middle), and that this booklet constitute the basic cognitive portion of the High School battery. Actual testing time for this portion is estimated as 2½ hours; to this must be added administrative time. Thus, this booklet should fit into a normal school morning. Moreover, this booklet should yield all aptitude composites of interest to school counselors. The only service composites not provided by this booklet would be the Army's combat arms composites which would require the General Information test and the Classification Inventory from the proposed Booklet III.

Booklet II, requiring about 25 minutes actual testing time, would consist of a 250 item version of the VOICE. This could be offered under the High School Testing Program to those schools desiring it as a supplement to the Basic Booklet. However, its administration should be contingent on prior administration of the Booklet I. It could be administered in the afternoon after morning administrations of the Booklet I.

Booklet III should be administered at AFES to service volunteers.

Specific recommendations about use of the battery are:

(a) That the entire battery be administered to all service enlistees via some combination of high school, recruiting location, and AFEEES administration.

(b) That all 14 booklet I scale scores, along with the complete answer form image on Booklets II and III, be transmitted to the appropriate personnel R&D laboratory on all service accessions. In this way, each of the services will be better able to assess adequacy of the battery for their purposes, to evaluate battery components requested by the other services, and to determine the best combination of these data for their personnel programs.

(c) That a set of composite scores designed for differential validity be provided to counselors. This would best fit the counseling mode of use. Structure of these composites should be decided at the point when intercorrelations among the battery's components are available.

(d) That norms for the counselor score set (for both booklet I and Booklet II) be based directly on performance of a nationally representative sample of high school students. It is proposed that this should properly be accomplished via contract when preliminary form of the instruments is available; identity of schools participating in the testing program would be provided the contractor as a basis for sample development.

(e) That each of the services be permitted to combine and use the basic test data in the way that best serves its own selection and classification needs.

(f) That an AFQT score for service and DoD use only be developed from the Arithmetic Reasoning, Word Knowledge, and Space Relations tests.

#### MILESTONES AND CONSTRAINTS

##### Milestones

In order to meet the DoD goal of September 1975 for implementation of a revised and expanded Joint Service test battery, it is essential that specific service cooperation with AFHRL be secured on a timely basis, and that present programmed delivery time problems on item contract products be circumvented. It is important to understand that time lag on the milestones below will impact negatively on the desired September 1975 implementation goal. Since item contracts will not be implemented until late June 74, it is imperative that item content of Forms 5 and 6 be taken from other sources, and that additional forms be placed into use later during the 75-76 school year; construction and norming of these later forms cannot begin until summer 75 when most of the items from contracts will become available. Following is a proposed milestone table for Forms 5 and 6:

##### Milestone

##### Completion

Service agreement (in writing) to battery content and plan

30 Jun 74

Army and Navy provision to AFHRL of adequate test items from their item files for the forms each of Attention to Detail, Numerical Operations, Mathematics, Verbal Information, General Science, and General Information (along with associated test statistics), Keyed responses for these

|  |           |
|--|-----------|
| items, and keys for the Army Classification Inventory and the Navy Vocational Interest Inventory   | 31 Jul 74 |
| AFHRL preparation of tentative test scales from Army and Navy submitted items and AFHRL item pools (Scales to be $\frac{1}{2}$ again desired length to allow item discard) | 15 Sep 74 |
| Service and/or AFEES administration of scales to allow for item analysis, scale adjustment, and scale intercorrelation   | 31 Oct 74 |
| AFHRL item analysis, scale adjustment, and intercorrelation  | 15 Dec 74 |
| Final printers copy, Forms 5 and 6   | 1 Feb 75  |
| Establishment of High School Norms for the expanded battery via contract:  |           |
| (a) Preparation of Work Statement (AFHRL)  | 1 Sep 74  |
| (b) Provision for funding  | "         |
| (c) Contract negotiation   | 1 Dec 74  |
| (d) Start of school testing by contractor  | 1 Mar 75  |
| (e) Identification to contractors of counselor composites (working group)  | 15 Mar 75 |
| (f) Contractor Completion of normative runs  | 1 May 75  |
| (g) Report of High School Norms to AFVTG   | 15 May 75 |
| Establishment of composites and norms by individual services for their procurement use   | 15 May 75 |
| Establishment of Item Writing Contract for added content areas   |           |
| (a) Work statement preparation   | 1 Sep 74  |
| (b) Provision for funding  | 1 Sep 74  |
| (c) Contract Negotiation   | 1 Dec 74  |
| (d) Final item delivery  | 1 Jun 75  |

Implementation of work on Forms 7 & 8 1 Jun 75

Comparison of Revised ASVAB with commercial  
test batteries

- (a) Preparation of Work Statement 30 Dec 74
- (b) Provision for Funding 30 Dec 74
- (c) Contract Negotiation 31 Mar 75
- (d) Contract Completion 30 Sep 75

Constraints and Impact

If a revised joint service battery, appropriate for both the High School Testing program and for service production testing is implemented in the fall of 1975, it is essential that considerable expansion of the present ASVAB be accomplished within a quite short time frame, particularly in view of the necessity of accomplishing various studies to assess adequacy of the revision and to establish meaningful test standards for the revision. The expanded content is essential to cover service procurement needs not adequately covered in the present ASVAB. Moreover, if the battery is to be accepted by High Schools, it is essential that data provided to them reflect status of the revised battery rather than its abbreviated predecessor. Major constraints in meeting the Fall 75 implementation goal are outlined below:

- (a) Test item availability - Two item writing contracts for production of replacement items for the present ASVAB content and format will be negotiated before 1 Jul 74. Under even the best of conditions it is not likely that contract products will be analyzed and available in time for full revision accomplishment following contract termination.



Moreover, these contracts do not include areas identified by the services as necessary additions under the expanded use. It is believed that items in existing AF item files can be revised and used to produce two forms of the content areas being carried over into the revision (these must then be analyzed on joint service samples). However, it is imperative that Army and Navy provide AFHRL with either two forms of their desired "add-on" scales, or with adequate items from their files to produce the desired add-ons.

(b) Number of forms - While most members of the ASVAB Working Group expressed the need for as many as four forms of the battery (because of compromise problems), it would be untenable to attempt the full four form development by fall of 75. It is proposed that two forms be developed initially, and that follow-on development of additional forms begin in the summer of 75.

(c) Service Test Standards - It is appropriate that composites from the expanded battery which are provided to school counselors be designed for differential classification, and that norms for these scores reflect student (not mobilization population) performance. It will be necessary for each of the services to establish its own composites and conversion standards for procurement application in adequate time to meet implementation suspenses. Also, timely contractual support for establishment of high school standards is essential; this is necessary because of battery expansion.

(d) Revisions beyond Forms 5 and 6 - It is imperative funding for an item contract for "add-on" areas in this revision be available Sep 74

Memorandum for Record

1 Jul 74

SUBJECT: Working Meeting on ASVAB, Form 5 and 6, Revision, 28 Jun 74,  
at Army Research Institute

1. Subject meeting was held at Army Research Institute, Arlington, VA, at 0830 hours on Friday, 28 Jun 74, with Dr. Lonnie Valentine as chairman. In attendance were:

Lonnie D. Valentine, Jr., AFHRL  
William E. Alley, AFHRL  
Col Donald Taylor, AF/DPXOS  
Mike Fischl, ARI  
Milton Mayer, ARI (PM only)  
Leonard Swanson, NPTRC  
Jeannie Fites, OASD (MR&A) (AM only)  
Ed Dover, USMC (AM only)  
Joe Cowan, USCG  
Harry Wifong, AFVTG/RD (til 1500)

2. Purpose of the meeting was to finalize outline for revision of ASVAB to assure utility as a common service selection and classification battery. The preliminary revision plan proposal, submitted by AFHRL on 21 Jun 74 (attached), served as a vehicle for the days deliberation. It is noted that Gus Lee, OASD (MR&A) had requested development of such a plan by a service laboratory working group to be chaired by Dr. Valentine. The attached plan was coordinated by the Laboratory representatives via telephone, and issues still to be resolved were noted in its cover letter. It is further noted that the steering committee will probably require (a) a single battery administered across all programs (procurement and High School) which (b) can be administered in approximately one half day. It is with these constraints in mind that modifications to the basic outline reflected in this memorandum were arrived at.

3. Number of forms to be developed initially was discussed. Dr. Valentine pointed out that item availability (until completion of item contracts) and norming time requirements will set limits on this. It was agreed that three form, with some anchor item overlap will be developed initially for Fall, 1975, implementation with work on three additional forms to commence as soon as new item pools become available from current contracts; previous ASVAB forms and existing Air Force, Army, and Navy item files will be used as item sources initially.

4. Content areas were reviewed one-by-one and the following outline, to be regarded as a substitute for the 21 Jun outline, was agreed upon; explanatory comments are included under each item type.

| <u>Content Area</u> | <u>No. of<br/>items</u> | <u>Estimated<br/>Time</u> |
|---------------------|-------------------------|---------------------------|
|---------------------|-------------------------|---------------------------|

a. Attention to Detail (AD)

30

5 min.

(Relative merits of Coding Speed (CS) and this test were considered. It was noted that the two correlate about .42 with each other, suggesting that the tasks do differ. AD correlates lower with mathematical and verbal measures than does CS.)

|    | <u>WK</u> | <u>AR</u> | <u>Subt &amp; Division</u> |
|----|-----------|-----------|----------------------------|
| CS | .48       | .43       | .52                        |
| AD | .29       | .32       | .40                        |

Thus, <sup>AD</sup>~~CS~~ was selected because (a) it requires less testing time, and (b) it offers more unique variance than does CS.)

b. Numerical Operations (NO)

50

5 min.

(NO has demonstrated validity for clerical and some other specialties. This is a speeded test involving ability to perform the 4 basic math operations with whole numbers rapidly.)

c. Word Knowledge (WK)

30

12 min.

(This scale is to be longer than most scales because of Guard needs.)

d. Arithmetic Reasoning (AR)

20

20 min.

e. Space Perception (SP)

20

12 min.

f. Mathematics Knowledge (MK)

20

20 min.

(Modeled after Army and Navy scales involving algebraic problems)

g. Electronics Information (EI)

30

15 min.

(Content will be modified to include some radio electronics items to better serve Navy needs.)

h. Mechanical Comprehension (MC)

20

12 min.

i. General Science (GS)

20

10 min.

(10 Physical science and 10 Biological science items)

j. Ship Information (SI)

20

5 min.

k. Automotive Information (AI)

20

10 min.

1. General Information (GI) . . . . . 15 . . . . . 10 min.

(To be less masculine in orientation than the present army scale.)

m. Interest Inventory (II) . . . . . - . . . . . 30 min.

(This will consist of a consolidation of a portion of VOICE with Army Classification Inventory items.)

|                          |                     |
|--------------------------|---------------------|
| Estimated Testing Time = | 2 hrs 40 min        |
| Estimated Adm. Time =    | 30 min              |
| Total                    | <u>3 hrs 10 min</u> |

5. Time given here is estimated from service experience with similar measures; exact times will be established via timing runs.

6. With regard to the Interest Inventory, it is recognized that Army needs certain Classification Inventory material to obtain some of their composites, and that inventory yielding scales for school counselor use is desirable. Air Force and Navy use their inventories in a counseling mode, so VOICE and NVII are both potentially useful instruments for the High School need. However, VOICE (in a shortened version) requires considerably less testing time than does NVII. Thus, it is proposed that a 30 minute inventory be developed from VOICE and the Classification Inventory to cover both the Army composite requirement and school counselor interest scale needs. Mr. Alley at AFHRL will work on such consolidation and shortening with Dr. Fischl. Both Air Force and Navy use their interest inventories for counseling purposes (as opposed to using them in composite formation). The services will investigate utility of each of the interest inventories for their programs preparatory to later modifications of the ASVAS interest inventory. In the meantime, it is strongly recommended by the working committee that the services be allowed to continue use of their own interest inventories for counseling purposes. This is especially critical for Navy.

7. It was agreed that we would aim toward development of subtests with average item difficulty of .5 and with a rectangular distribution of difficulty indexes. It was further agreed that the battery would be so arranged as to place the highly loaded subtests (AD and NO) last; this is predicated on operational experience in which subjects have been known to go back and work on these scales later when they were administered first.

8. Army and Navy representatives have agreed to screen their test files for usable items (especially in the add-on areas). AFHRL will start assembly of preliminary scales. Support of the revision to be provided by the services consists of:

a. provision of some items from existing files,

b. validation against the individual service criteria,

c. assistance in collection of cross-service samples for use in necessary analyses (i.e., item analysis and standardization).

d. review (through the working committee) of test material as it is developed to assure acceptability across service Labs.

9. Dr. Fischl indicated that he felt there may need to be some modification of time schedules. It is recognized by all participants that milestone schedules will be tight. Some modification of these may be necessary, readjusting timing of some of the phases. Agreement about this will be obtained as soon as a detailed plan for test norming is prepared; this will allow for better service estimates of time required for data collection.

LONNIE D. VALENTINE, JR., Chief  
Selection and Classification Systems Branch

(3)

DEPARTMENT OF THE AIR FORCE  
AFHRL PERSONNEL RESEARCH DIVISION (AFSC)  
LACKLAND AIR FORCE BASE, TEXAS 78236

REPLY TO  
ATTN OF: PES

19 Aug 74

SUBJECT: Trip Report - Washington, D.C.

TO: PE

1. Traveler: Dr. Lonnie D. Valentine, Jr., PES
2. Itinerary: Travel on 14 Aug 74 via commercial air to Washington, D.C., (OASD(MR&A)) with return to San Antonio in the evening of 15 Aug 74.
3. Specific Purpose of Trip: to brief the ASVAB Steering Committee on current status of ASVAB expansion and service agreement about it, and to review effort still required.
4. Persons contacted:

|                   |           |
|-------------------|-----------|
| Mr. Srull         | OASD      |
| Mr. Gus Lee       | OASD      |
| Mrs. Jeanne Fites | OASD      |
| Admiral Carroll   | Navy      |
| Mr. Ed Dover      | Marines   |
| General Putnam    | Army      |
| Mr. Lou Ruberton  | Army      |
| Colonel Emannuel  | Air Force |
| Lt Col Robinson   | DPXOS     |
| Maj Wilkinson     | RDP       |
5. Discussion:
  - a. The first eight persons listed in 4 above were in attendance at the ASVAB Steering Committee meeting in Mr. Srull's office at 1000 on 15 Aug. Dr. Valentine reviewed the Ad Hoc Committee's ASVAB content plan for them, discussed current status of work (preliminary scales are in preparation), and indicated areas in which there is still some disagreement or unhappiness re content. Specifically, Army has expressed some dissatisfaction about use of 30 (rather than 20) Word Knowledge test items while Coast Guard feels it must have the longer scale (actually, difference in testing time is quite minor); Navy has expressed some general concern about brevity of scales and its possible impact on reliability (though composites should be more reliable than the individual scales); Navy has expressed concern about use of a 30 minute interest inventory, and would probably prefer its exclusion from the revision (though Army must have some non-cognitive material for a few of its composites). The likely solution to the latter problem could include use of the necessary Army material coupled with offer of either NVII or VOICE to the schools as an optional extra.

b. Necessary R&D activities to complete the revision were outlined. It was pointed out by Dr. Valentine that, while test copy in revised form can be available by Fall 75, adequate validations of the revised version cannot, because of the impossibility of having adequate matured data by that time. If the test is placed in use in Sept 75, it will be necessary to operate on the basis of interferred validity from predessor tests. Mr. Lee and Mr. Srull indicated that the Policy Board will probably insist on Sept 75 implementation. They also indicated that they were signing out \$217K to Air Force that afternoon for support of revision (specifically for contract effort). Mr. Lee indicated understanding that there were logistics problems which will impact on AFVTG (i.e., preparation of materials for the field, programming, etc. and indicated that he will call a meeting of the full working group in about 2 months to establish milestones. In preparation for that meeting the Ad Hoc committee should meet to outline agreement on data collection procedures and analyses, thereby providing a realistic basis for milestones.

c. Dr. Valentine visited briefly after the meeting with Lt Col (Col selectee) Robinson in DPXOS, and summarized the meeting for him. Lt Col Robinson indicated that he will probably be visiting AFHRL next week to meet people, etc. At Col Emmanuel's request, Dr. Valentine met briefly with him. He asked that he be kept informed re decisions and tentative agreements from an upcoming Ad Hoc committee meeting, and indicated that, when a report briefing is ready to go to the Steering Committee, General Tallman and/or Gen Roberts would probably want advance briefing (i.e., dry run).

6. Conclusions/Recommendations: It will be necessary to call an Ad Hoc committee meeting within the next few weeks to prepare for a milestone meeting of the ASVAB Working Group. Mr. Hodges and Mr. Swanson have been contacted, and this necessity discussed with them; others will be contacted Monday (Aug 19). It is anticipated that this should occur in the first half of Sept. The meeting will be used to review item selection, review contract work statements for norming, item development, and comparisons with Commercial Batteries (these are the items to be supported by OASD), assuring service Lab agreement that the procedures required will satisfy everyone's immediate needs. Later reports to the full Working Group and the Steering Committee will be required with dry run at Hq USAF.

*Lonnie D. Valentine, Jr.*

LONNIE D. VALENTINE, JR., Chief  
Selection and Classifications Systems Branch

Cy to: AFHRL/DO  
AFHRL/XP  
AFVTG/CC  
Bureau of Naval  
Personnel (Mr Hodges)  
U.S. Army Research  
(Dr Fischl)  
Hq USMC (Mr. Dover)  
USCG (Mr. Cowan)

(A)  
+  
(11)  
26 September 1974

MEMO FOR THE RECORD

SUBJECT: Meeting of the ASVAB Ad Hoc Committee, 23-24 Sep 74, at Navy Personnel Research and Development Center, San Diego, Calif.

1. Persons in attendance at the meeting were:

Joe Cowan, Coast Guard  
Len Swanson, NPRDC  
Charlie Hodges, NPRDC  
Ed Dover, Marines  
Mike Fischl, Army Research Institute  
Harry Wilfong, AFVTG  
Lonnie Valentine, AFHRL  
Norman Abramson, NPRDC  
Joyce Dann, NPRDC

2. The meeting was convened at 1300 on 23 Sept 74 and continued through 24 Sept. Purpose was to reach joint service agreement about several ASVAB revision matters, and to establish a revision time table supportable by the various service personnel labs (see attached agenda).

3. Specific items discussed, and agreements reached about them include:

a. The DOD Goal of a Usable Joint Service Battery by 1 Sept 75 -  
It is emphasized that a revised battery (i.e., test booklets, keys, administrative and scoring instructions, and norms) is achievable by the DOD target date. However, adequate back-up data such as validations specific to the revised battery and its several applications, investigations of fairness, etc. cannot be accomplished prior to that date, even under the best of circumstances. Thus, it must be clearly understood that, by 1 Sept 75, the battery will be defensible for applied use only to the extent that one is willing to assume validity and "fairness." This understanding is of critical importance in view of revised APA standards for tests and of recent EEOC fairness guidelines. With regard to Normative Data for High School use, it will be necessary to conduct school testing with one form of the revised battery near the end of the 74-75 school year; this may make for difficult data collection since schools will be reluctant to provide testing time during their busy "end of school" months. Schools cooperating in such effort will, in effect, be providing a second testing session for the one school year. With regard to validations of the revised battery and composition of new composites, it will be necessary for the services to go directly to their Tech Training Centers as soon as printed test material are available to start validation data collection. If the services are required to institute production testing with the revised forms on Sept 1, the only feasible and proper assumption about composite composition



is that components already in that service's composites must be used; revisions of service composites to include added battery components must await accumulation of specific validity data. Evaluations of fairness must await the collection of such data on reasonable numbers of minority trainees.

b. Interest Inventory - It is recognized by the participants that a good interest inventory, validated against job satisfaction, for use in high school counseling and recruit counseling in the services is highly desirable. Both Navy and Air Force have substantive research on such instruments in progress. Since these were independent developments, cast in incompatible item formats, and with different scales, an effective, brief, and scientifically defensible synthesis of them cannot be accomplished. The Army Classification Inventory, an 87 item combination of interest and background questions contains material which is critical content in a joint service battery if all army composites are to be derived. For that reason, a brief background inventory will be included in the battery; however, it must be clearly understood that this is inadequate for generation of useful interest scales, validated against job satisfaction criteria, for counseling use. The Ad Hoc Committee entertains serious doubt that an adequate interest inventory can be sandwiched into the battery as long as a stringent 2 hour 45 minute maximum time limit is imposed on the battery. It is recognized that in requesting such a limitation, the joint Recruiting Commanders were probably motivated in part by concern for battery acceptance within the High Schools, and in part by a natural and understandable desire to minimize time required at recruiting activities by testing. However, it must be recognized that inclusion of components required by the various services in a common test battery places considerable strain on such time limitations, particularly if the battery's components are to be long enough to be reasonably reliable. At such time as the Services develop a valid interest inventory for inclusion in the battery, such time constraints will make an effective joint battery near impossible. At some future point, careful consideration must be given to the extent to which service operating procedures could and properly should be compromised by the demands of school testing.

c. Copies of item pools, screened for item analysis and use in selection of ASVAB items were distributed to participants for review. Within a few days, reactions to the items will be solicited by AFHRL/PES prior to printing of experimental item analysis booklets.

d. Copies of draft work statements for three contracts identified to be supported by DOD funds were also distributed for review. Within a few days, AFHRL/PES will contact participants via telephone for feedback re suggestions.

SLIP 300-15

e. With regard to test development and norming time phasing, the following time table was identified as "tight" but feasible.

| <u>Date</u> | <u>Activity</u>   |
|-------------|---|
| 30 Nov 74   | Start of Data collection for item Analysis (Printing of experimental booklets, distribution to the service Labs, and specification of sample composition from the services) must be completed prior to this date. Although only about 600 to 700 cases per experimental booklet are needed, there will be a considerable number of booklets. On all cases, data on race and sex must be obtained. |
| 31 Jan 75   | Completion of item analysis testing. It is hoped that this date can be beat, but the Christmas - New Years period will cause some slowdown. As individual booklet administration is completed, item analysis will start, and will continue to completion as expeditiously as possible.  |
| 28 Feb 75   | Development of final Test Scales  |
| 31 March 75 | Experimental printing of final booklets   |
| 15 April 75 | Start of Normative Testing  |
| 15 July 75  | Completion of Normative analyses  |

FORM  
Op. A. 150  
90.25

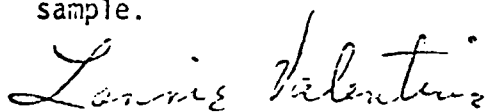
3059t In p. 10-1

NOTE: Once final test experimental printing is completed, masters can be submitted for operational printing.

f. Item Analysis - It was agreed that item analyses for final item selection will be based on joint service samples of trainees. Data will be collected on answer forms compatible with the AFHRL scanner. Six to seven hundred examinees will be used for the analyses on each experimental booklet. Samples will contain reasonable numbers of women and of minorities. Item p values will be based on sample proportions of women and ethnic minorities proportionate to their expected incidence in the Services. Discrimination indexes will be examined separately for women and ethnic minorities to guard against inadvertant final selection of items discriminating negatively for these groups. Item analysis cases will be obtained from the services in proportion to their typical monthly flow of trainees; typically this flow is: Marines - 5000; Coast Guard - 500 to 700; Navy - 7000 to 8000; Army - 15,000; Air Force - 6000. AFHRL/PES will layout a plan allocating N's and order for administration for coordination with the other services. It will be required that samples be collected so as to give geographic

balance in the samples (i.e., cases from all training centers) and that race and sex be identified on the answer sheets.

g. Normative Development - It is anticipated that data for high school norms will be collected on one form via contract. Equipercetile conversions to these norms will be developed for the remaining two forms while service norms are being developed. AFHRL/PES will develop and disseminate for consideration a normative design which will allow consolidation of service samples into one larger sample for development of all service norms. Since all services have norms on ASVAB-2, the design will probably utilize it as a reference for equipercetile conversion development. This will also allow for correlation among forms. It must be noted at this point that this design will require more than the usual experimental testing 4 hour time block for the cases in the normative sample.



LONNIE D. VALENTINE, JR., Chief  
Selection and Classification  
Systems Branch

(5)

Telecon of 16 Dec 1974

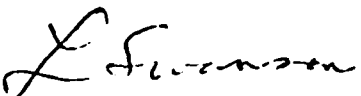
From: Dr. Lonnie Valentine, Jr.  
AFHRL, Lackland AF Base, Texas autovon 473-3827

To: L. Swanson, NPRDC

1. Gus Lee of DOD has scheduled a meeting of the ASVAB steering committee for 17 January in Washington D. C. Gus Lee asked Valentine if he thought it would be desirable for the working group to meet with the steering committee from time to time. He <sup>(w/ Lee)</sup> said that it could provide the steering committee an opportunity to ask questions at a detailed level. So this meeting may be attended by members of the ASVAB working group as well.
2. Jeannie Fites just had a baby daughter.
3. According to Iris Massey, the first group of ASVAB test booklets, to be used for item analysis, are due from the printer today. She will ship us copies as soon as they arrive. Valentine said it has been difficult to get printing completed in the requested time.
4. Major Wayne S. (for Steve) Sellman, <sup>Air Force</sup> test control officer in the Pentagon, is interested in chairing an APA symposium in September 1975 on the ASVAB. He has contacted the program chairman of Division 19 (Military Psychology) and received a favorable response. He sees this as having a representative from each service discuss status and accomplishments regarding development of revised ASVAB forms and validation within the various services. Valentine suggested me as being the most knowledgeable from the Navy. He asked that I call Major Sellman to let him know of my interest. Sellman's address is:

Hdqtrs USAF  
AF/DPXOS (Major Sellman)  
Washington, D.C.  
Autovon: 227-7716

A 300 word summary on the ASVAB validations in the Navy would be requested fairly soon.

  
L. Swanson

(6).

## HUMAN RESOURCES RESEARCH ORGANIZATION

300 North Washington Street  
Alexandria, Virginia 22314  
(703) 549-3611

January 22, 1975

MEMORANDUM FOR: Major General George Putnam  
Rear Admiral E. J. Carroll  
Mr. Ed Dover  
Colonel H. L. Emanuel

SUBJECT: Draft Report on Status of ASVAB Development

Attached draft has been prepared in accordance with Mr. Snull's guidance at the Steering Group meeting of January 17, 1976.

After I have your comments, I will revise the draft, check with you again, if appropriate, and forward the revised draft to Mr. Snull, with a copy to you. In particular, I would forward the "Service Views" precisely as you state them.

Mr. Snull wishes to sign the report to Mr. Brehm by January 31. It would therefore be helpful to have your comments by January 29, 1975. If your comments are addressed to me at 3D970, Pentagon Building, they will be promptly forwarded

*Gus C. Lee*  
Gus C. Lee  
HumRRO  
Phone 549-3611, 304

cc Mr. Lou Ruberton  
Dr. Mike Fischl, Army Research Institute  
Lt. Cdr. Larry Bequin  
Dr. Lonnie Valentine

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D R A F T

Steering Group Report - Status of Development and Implementation  
of Armed Services Vocational Aptitude Test Battery

PURPOSE:

- (a) To report on problems in meeting the current schedule for implementation of ASVAB Forms 5, 6 and 7 as a common entry test;
- (b) To discuss alternative courses of action and provide Steering Group recommendations.

DISCUSSION AND ISSUES:

This discussion covers:

- 1. Problems of the Executive Agent in meeting the current schedule;
- 2. Possible revisions in the schedule; and
- 3. Alternative courses of action.

1. Problems in Meeting the Current Schedule.

The problems in meeting the current schedule for implementation on September 1, 1975, are largely occasioned by the slippages in item analysis. Under the current schedule item analysis of 600-700 items was to be completed by January 31, 1975. Because of slippages, Service laboratories are starting to collect data needed for item analysis during the week of January 20. The current schedule has slipped 30 days and the original schedule has slipped 60 days. The selection of final test items will drop back until March 31 and the printing of the final experimental test booklet will drop back until April 15-30.

The contract negotiations for norming the test in the high schools have not been completed. The lowest acceptable bid for this proposal was \$141,000 compared to \$95,000 programmed. Additional funding for the contract must be provided. (The contract calls for the administration of the test to 30,000 students in order to develop norms used by high school counselors.) A convenient means to provide the funds is to "draw down" on other funds made available by ASD(M&RA) to the Air Force for ASVAB development. Funds of \$92,000 were made available for comparative analysis of the ASVAB with commercial batteries; these funds could be reprogrammed for high school norming and subsequently restored.

The delay in printing the experimental test booklet not only results in postponement of the norming of the test in the high schools (assuming additional funds are made available and the contract is executed on a timely basis) but also results in postponement of Service norming and validation.

The Armed Forces Vocational Testing Group believes that it is impractical to administer the experimental test <sup>for</sup> high school norming in May. The high schools are not expected to be receptive to participation in the normative studies because of early termination dates of some schools, final examinations, and graduation activities. The AFVTG believes that the September 1 date for implementation of the test for high school use is impractical.

The Services believe that the September 1 target for Service operational use of the ASVAB must be postponed. Service norming must

now take place May 15 - August 15. Insufficient time would be available for printing and distribution of tests, manuals and answer sheets to AFEES and other examining points for implementation by September/. The Army, Air Force and Marine Corps believe that October 1 is the earliest practical date for implementation for operational use.

The Navy laboratory has a more serious norming and validation problem because previous ASVAB sub tests have not been validated against performance in Navy schools. The other Services have previously done such studies. For this reason the Navy requirement is to give the new ASVAB experimentally in a wide number of the more important Navy schools. Navy's validation plan calls for operational use of the new ASVAB in Navy as of June 1, 1976.

## 2. Possible Revisions in the Schedule.

### a. High School Testing Program

There is little latitude to accelerate development of the final experimental test booklet needed for high school norming and for Service norming and validation. Each sub-test scale will be developed by the lead laboratory (Air Force Human Resources Laboratory) as soon as item analysis data is received from Service labs but the final experimental test booklet could not be printed before mid-April at the earliest.

If final test scales were available April 1, accelerated printing for norming purposes might be accomplished and contractor test administration for high school norming



might be accomplished during the first two weeks in May. The first two weeks in May might be acceptable to some schools which would object to the last two weeks in May. This plan would require unusually efficient administration of all steps and would be a very optimistic schedule.

If the test is not given for high school norming during May of this school year, the earliest time that it could be given would be September-October, 1975. This schedule revision would permit introduction of the new test in the high schools in January 1976.

The September implementation date could be met in the high schools if we elected to defer high school norming. The unavailability of high school norms would make the test less attractive to high school counselors, particularly for civilian job or educational counseling; however, Service norms, except Navy's, would be available for counselor use.

b. Service Operational Use.

The maximum acceleration of the schedule would occur by printing the experimental test booklet and test administration materials concurrently. Such a schedule assumes that no previously unforeseen test construction problems came to attention during Service norming studies. The lead laboratory considers this assumption to be reasonable.

Under a priority printing cycle the printed materials would not likely be available earlier than August 15. A sufficient amount of time would not be available for distribution of test materials and training of administrators at test administration sites prior to September 1 implementation. The postponement of Service operational use, at least to October 1, appears to be necessary.

### 3. Alternative Courses of Action.

It is convenient to discuss separately the options for the high school testing program and for Service operational use.

#### a. High School Testing Program

(1). It would be possible for AFVTG to approach the high schools now to see if test administration for normative purposes can be arranged for May. This course of action is disadvantageous from the standpoint of relationships with the high schools who would be asked to provide a second testing during this school year to 30,000 students. The high school officials would not benefit directly from this cooperation. The disbenefits would be minimized, however, if the testing could be done in the first two weeks of May. This course would permit implementation in the high schools at the same time as Service operational use begins.

(2). The test could be introduced in the high schools without high school norming so as to begin high school and Service use of the test at the same time. This would be a step backward in the usefulness of the test by high school counselors. The disbenefits of this course of action could be minimized, however, by deferring the normative testing until September-October, 1975 and advising the counselors that high school norms will be furnished before January 1976.

(3). The high school norming could be postponed until September-October 1975 and introduction of the test in the high schools could be postponed until the mid-school year--January 1976 or until the school year beginning September 1976. AFVIG prefers the course of action which is most beneficial and least disruptive to the high schools and, therefore, would prefer postponement until September 1976.

b. Service Operational Use

(1). October 1 can be directed as the implementation date for all Services. This date is not acceptable to the Navy because they would have little confidence in the norming and validation of the new test which can be accomplished during the three months period allowed for Service norming and validation. (The other Services have previously used tests which more closely resemble

the new ASVAB than do the tests previously used by Navy. The other Services will rely, in part, on previous studies to complete their norming in the time allowed.)

(2). Implementation can be planned for October 1, on the basis that the Navy would make partial use of the new ASVAB. They would use the ASVAB for those who enter under general enlistments but continue to use their present tests for those who enter with specific training guarantees. After their validation studies are completed, Navy would shift to full use of the ASVAB by June 1, 1976.

(3). Operational use of the new ASVAB could be planned for all Services for June 1, 1976, thereby allowing Navy to complete its validation studies and selecting a common date to commence Service operational use.

c. Common Date For High School Testing and Operational Use of New ASVAB

1. It appears that the earliest common date for service operational use and high school use is October 1, 1975. This date can probably be accomplished by (a) permitting Navy to use the new ASVAB for general enlistments and to use the present tests for selection for school training and (b) introducing the new test in the high schools without high school norms but furnishing norms by January, 1976, or earlier.

2. A second choice for a common date is to defer the implementation of the test until January 1976 when high school norms will be avail-

able. Under this choice, the Navy would make partial use of the new ASVAB until June, 1976.

3. It is also possible to defer implementation for both high school and operational use until June 1976 when the Navy plans on full use of the new ASVAB for all accessions.

### ISSUES

The issue is one of the date of implementation, particularly the "short-cuts" in validation or the risks of inefficient administration which can be accepted in order to obtain earlier implementation. The feasibility of use of the new ASVAB as a common Service entry test which meets the needs of the Services and the High School Testing Program is not an issue. There is general agreement with the acceptability of the earliest implementation date which does not compromise norming, validation or efficient test administration. The issue narrows down to how long do we postpone implementation in order to provide better norming, validation or more efficient test administration.

### SERVICE VIEWS

The Army, Marine Corps and Air Force agree that October 1, 1975 is the earliest date for operational use of the new test. Service acceptance of this date is based on the assumption that the Air Force, as Executive Agent, could furnish test booklets and other materials for operational printing concurrently with the printing of the final experimental test booklet on May 15. If directed to do so, the Navy would develop a plan for partial operational use of the ASVAB on this date.

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The Navy is opposed to using the new ASVAB for determining eligibility for school training prior to its validation in selected Navy schools. They have not made previous validation studies of tests sufficiently similar to ASVAB sub-tests. They would not have confidence in using statistical procedures for validation which the Army, Marine Corps and the Air Force plan to use. Navy would begin its validation studies in Navy schools as soon as the test booklets are available for this purpose. If validation begins May 15, 1975, performance results of the graduates of the longest courses would be available about March 1, 1976. The Navy believes that the earliest they can plan on full operational use of the new ASVAB is June 1, 1976.

The Services are more concerned with efficient operational use of the new test than with the high school testing program because operational testing provides the preponderant flow of their enlistments. Except for the Marine Corps view that a new test is needed because of compromise of the present test forms, the Services would be willing to postpone operational use of the new test so that introduction coincides with the introduction of the new test in the high schools.

RECOMMENDATION: To delay implementation of ASVAB until October 1, 1976, for both operational use and the high school testing program. The recommendation is the choice which involves least delay. It is recognized that the recommendation involves partial use of the new ASVAB by the Navy and some undesirable inefficiencies in the High School Testing

Program. It is also recognized that any further slippages would delay implementation until November 1.

In order to plan so as to minimize the disadvantages of the recommendation the following actions are proposed:

1. The Navy be requested to submit a plan to ASD(M&RA) for partial use of the new ASVAB on October 1, 1976.

2. The Air Force, as Executive Agent for the High School Testing Program, be requested to submit a plan to ASD(M&RA) for use of the new ASVAB in high schools on October 1, 1976--recommending either contract norming in the high schools in May 1975, or use in the high schools on October 1, 1976 without high school norms--the norms to be furnished by January 1976.

3. The Air Force, as Executive Agent for ASVAB development should submit a detailed schedule to ASD(M&RA) of all steps which need to be completed to implement operational use on October 1. The schedule should contain actions needed, completion dates, the agency which must complete the action, and the primary action officer. The schedule should be coordinated with Working Group representatives of the Services as appropriate.

The alternative recommendation is to proceed with operational implementation on October 1, 1975, but delay use in the High School Testing Program until January 1976. This does not delay operational use significantly but has the disadvantage of separate implementing dates for the operational and high school programs. It provides, however, for a more orderly introduction of the new test in the high schools than does the October 1 implementation date.

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## AFHRL MONTHLY ACTIVITY REPORT, MARCH, 1975

\* 12. Development of Armed Services Vocational Aptitude Battery (ASVAB) Forms 5, 6, and 7. Printing of final booklets for experimental administration for purposes of item analyses has been accomplished. Booklets have been distributed to the Army, Navy, Coast Guard, Marine Corps, and Air Force for testing. Except for the Army, testing on first set of booklets (AX5, AX6, and AX7) has been completed, answer sheets returned, and item analysis is underway. (Massey/PES/2807/7719-10-10)

13. Predicting Tech School Success Using High School Transcripts. This study assesses the unique contribution of high school information not determined from the candidate's Aptitude Index (AI). In order to investigate the use of information from high school records in the prediction of success in AF technical school, literature search, design of survey instrument and design of transcript request forms have been completed. ACMR clearance of these forms is being requested. (Valentine/PES/2807/7719-10-11)

14. Pilot Selection Research. A test of kinesthetic memory using the PDP-8/L mini-computer has been developed and administered to approximately 30 enlisted personnel in order to assess the adequacy of the instructions and to obtain a rough estimate of the variability of the test scores. This test, with modified instructions, will be administered in conjunction with the Information Processing Test to all personnel scheduled to attend the Flight Screening Program (FSP) in order to assess its validity in predicting pilot training success/failure. (Hunter/PES/3827/7719-12-08)

15. ACP 80/80 Program. Six months have elapsed since final testing for this program was completed. Therefore, it is assumed that some post-OTS criteria have matured. Accordingly, a new study is being designed which will evaluate the AFOQT, college GPA, and major academic field as predictors of performance in OTS, performance in officer technical schools, and, if sufficient data are available, performance as measured by the OER. In addition, the data will be analyzed to assess equity in selection for OTS by the AFOQT. The analysis request in draft form is essentially complete but has not yet been formally submitted. (Miller/PES/2807/RPR 72-10/77191214)

16. AFOQT. The final version of the Manual for Administration of AFOQT Form M in the AFROTC program was received from AFROTC, Maxwell AFB. This version includes changes suggested by PES in January 1975. A specimen set of the special answer forms used by AFROTC was also received. AFQT standardization data were provided to Mr. Chubb, AMRL/HEB, for his use in a study requiring drawing of matched officer samples on the basis of AFOQT scores. (Miller/PES/2807/77191212)



(8)

## AFHRL MONTHLY ACTIVITY REPORT, APRIL, 1975

report is in progress. A draft of the technical report is expected to be completed 1 June 1975. (PES/Jensen/3827/7719-10-09)

11. Item Analyses Supporting Armed Services Vocational Aptitude (ASVAB) Forms 5, 6, and 7. Item analysis for AX series of experimental tests has been completed. Tentative scales for Word Knowledge, Arithmetic Reasoning, Numerical Operations, and Classification Inventory have been developed and composition at Brooks has been affected, making ready for printing upon final approval by all services. Attention to Detail and Space Perception are in the hands of the draftsman being prepared for printing. Answer sheets for the BX and CX series of experimental tests are coming in slowly from other services. Upon receipt of sufficient number of cases, item analysis for purpose of item selection will proceed. Milestone date for completion of testing is 1 May 1975. Army reports that they will not meet this milestone (they estimate 15 May). Dr. Valentine reported this to the ASVAB Steering Committee on 28 April; they have been advised that this will necessitate a two week slippage on other development milestones. (PES/Massey/2807/7719-10-10)

12. Pilot Selection Research. The analysis performed by McDonnell Douglas Corp under work unit 1137-01-02 (Learning Sample approach to pilot selection) did not include all the measures collected by the Air Force on the subjects. This was due to a limitation in the maximum number of measures that could be submitted by the Air Force under the provisions of the contract. Therefore, an additional analysis will be performed in-house to include both the measures from the GAT-1 system and all of the additional measures that are available for the subjects. In conjunction with that effort, scores for all the subjects on the two psychomotor tests (Complex Coordination and Two-Hand Coordination) were submitted for key-punching. In addition, coordination was initiated with McDonnell Douglas for the transmittal to the Air Force of the data files containing the GAT-1 measures for all subjects. The complete data base should be assembled and ready for analysis in mid-May. (PES/Hunter/3827/7719-12-08)

13. Evaluation of Research Proposals. A request was received from the Frank J. Seiler Research Laboratory for evaluation of two research proposals submitted by members of the Life and Behavioral Sciences faculty of the Air Force Academy. Proposals were entitled Use of Biofeedback Techniques in Stress Management Training, and Validity of Various Measures in Predicting Pilot Training Performance. Proposals were evaluated by two task scientists. The validity study was found to be highly similar to current work on pilot selection at AFHRL. (PES/Miller/2807/7719-12-08)

14. AFOQT. A request was received from AFMPC/DPMROR5 for recent data on the validity of the AFOQT as a predictor of graduation/attrition from UPT. Data were required to evaluate a suggested

24 July 1975

PES

Status of ASVAB-5, -6, -7 Development

AFHRL/LOPP (Capt Carrity)

1. For your bi-monthly status report on ASVAB development, the following information is provided.
2. Dr. Valentine attended meeting of the ASVAB steering committee on 9 July 75. Events at that meeting are subsumed in the attached trip report.
3. Printing of Normative Study booklets for all three forms was completed by Defense Printing at Kelly AFB on the afternoon of 18 July 75, and these were delivered to AFHRL on the morning of 21 July (a Monday).
4. Set up of replacement pages necessitated by Army changes in items, proofing and local reproduction of replacement pages was completed on the afternoon of 23 July 75. These are currently being inserted into the booklets so that they may be prepared for shipment to testing locations.
5. Status of these materials is still, as of this date, indeterminate. This is because of a succession of events:

(a) Navy is displeased with Army substitutions into the test scales. As of the afternoon of 23 July 75, Navy plans to formally protest average scale difficulty as amended by Army changes. Specifically they are protesting the following areas (this also shows average difficulties as originally configured and as amended by Army changes:

| Area         | Form 5 |        | Form 6 |        | Form 7 |        |
|--------------|--------|--------|--------|--------|--------|--------|
|              | Orig D | Army D | Orig D | Army D | Orig D | Army D |
| Gen. Info.   | 50.5   | 61.5   | 49.7   | 61.3   | 51.0   | 61.5   |
| Math. Comp.  | 47.5   | 55.1   | 49.5   | 57.2   | 49.3   | 57.9   |
| Gen. Science | 51.2   | 55.6   | 50.6   | 54.2   | 51.9   | 52.4   |
| Auto Info.   | 49.8   | 57.3   | 49.5   | 55.7   | 49.7   | 56.9   |
| Comp Info.*  | 42.4   | 55.4   | 43.2   | 57.0   | 42.5   | 55.0   |

\* In this case, they want an average difficulty between the two values.

For the rest part, the concern is over about 5 probability points.



(b) On the afternoon of 22 July 75, Col. Hoggatt (AFVTG/CC) called Dr. Valentine, and alleged that he was most unhappy with test content, specifically in General Information, Arithmetic Reasoning, and Classification Inventory. It was pointed out to Col. Hoggatt that (1) Classification Inventory is an Army test, taken verbatim from Army, (2) he cannot rewrite it because it is noncognitive material which was empirically keyed; because of this any changes will have to be coordinated with Army Research Institute. (3) In the view of AFHRL/PES Classification Inventory is inappropriate for High School testing, but it is there because of DoD (IR&A) direction to include it; Army wants it, insists they must have, and, in fact, the Army member of the Steering Committee adamantly insisted that all components used by Army must be included in high school testing. (4) General Information is also used only by Army. The Army ACI scale is quite masculine in orientation (deals with sports, outdoor activities, weapons, etc.). ASVAB-5, 6, 7 versions are toned down some on this score, but further change could lead to Army rejection. PES also agrees that this is not entirely appropriate for high school use; it is there because Army insists they need it. (5) With respect to Arithmetic Reasoning, Dr. Valentine asked what VTG found objectionable; Col. Hoggatt said that he didn't know. Dr. Lewis and L/C Treadway from AFVTG visited PES to discuss these three areas. Essentially, the same things that were pointed out to Col. Hoggatt were reiterated. They were told that a look would be taken at the Classification Inventory re possible item rewordings but that these must be coordinated with Army. An "offensive" General Information sample item will be replaced in final master copy. In final master copy for Arithmetic Reasoning neuter person references would be substituted for reference, such as "Tom", "a man", etc. Their objection to AR was that 6 of the stems (out of 20 items) refer to "a boy", "a father and son", "Bob", "a man", or "a Boy Scout" rather than to some sexless creature. It was pointed out to them that while some of the desired cosmetic edits will be included in final master copy, they will ~~be~~ included in service norming booklets (specifically because they'll make no normative difference, and these booklets will only be used with service samples).

(c) In telephone conversations with Gus Lee (22, 23 and 24 July), Dr. Valentine pointed out VTG's continued unhappiness with GI and CI. Mr. Lee says that, by COB on 25 July 75 he will have OASD (IR&A) decisions on (1) inclusion or exclusion of ACI in high school versions, (2) whether (and which) Army substitutions of items are to be used, and (3) information on other item substitutions.

(d) On the afternoon of 23 July Dr. Valentine was visited by Mr. Lou Robertson (AFVTG) re normative testing. Letters to appropriate institutions re normative testing have been mailed. Mr. Robertson will be working with AFVTG. Mr. Robertson pointed out that he has checked on the time flow through AFTEES, and that, even using as many as 30 AFTEES, it will require 4 to 6 weeks of testing to obtain adequate "low ability"

range cases. It was further noted by him in a phone call on the afternoon of 24 July 75 that AFES have so dispersed testing personnel with mobile tests that only limited numbers of personnel are available to give tests at the AFES locations and he has requested that some arrangement be made to get Air Force and Navy recruiting personnel to assist as TA's.

6. In summary, dispersion of normative material has been delayed since 18 July by conflicting and changing demands by the services and AFVTG re test content. These conflicts impact on readiness of material for use and on ability to complete keys and scoring instructions. At the same time, Army reports that up to 6 weeks actual test time may be required (via AFES) to obtain adequate service reject cases for the normative samples. As a consequence of these circumstances, Test Development time tables will have to slip as follows:

| <u>Item</u>   | <u>Time</u>  |
|---|--|
| (a) Start of Normative Data Collection                          | (OASD(MR&A) Decisions (re para 5c) + 2 weeks (to allow final shipment familiarization, etc.) |
| (b) Submission of Master Copy for printing                      | +2 weeks (to allow for final Master modifications)   |
| (c) Completion of Normative Data Collection                     | +8 weeks (due to AFES flow)  |
| (d) Statistical analysis and preparation of service Norm tables | +11 weeks  |

This would, if one assumes, OASD(MR&A) decisions by 28 July 75, set dates at: (a) 11 Aug 75, (b) 11 Aug 75, (c) 22 Sept 75, (d) 13 Oct 75. This will, in turn, impact on other dates such as publication and distribution, etc.

7. As a special item for action, Mr. Ruberton's request for Air Force and Navy Recruiting service aide in AFES testing is noted. Request AFMPC/DMVW assistance in arranging such assistance.

LOUIE D. VALENTINE, JR., Chief  
Selection and Classification  
Systems Branch

1 Atch  
Trip Report  
Cy to: Mrs. Massey

Trip Report  
Washington D.C.  
8-9 July 1975

1. Traveler: Dr. Lonnie D. Valentine, Jr., PES
2. Itinerary: Travel via Commercial Air from San Antonio, TX, to Wash, DC (OASD (MR&A) and Army Research Institute) on 8 July 75 with return via Commercial Air on the evening of 9 July 75.
3. Specific Purpose of Trip: To attend meeting of the ASVAB Steering Committee.

4. Persons Contacted:

Mr. Donald Snull (OASD (MR&A))  
Mr. I. M. Greenberg " "  
Ms Jeanne Fites (MARDAC)  
Mr. Gus Lee HUMPRO  
Col. Emmanuel AF/DPX  
Mr. Ed Dover Marines  
Adm Smedberg Navy  
B/Gen. Forrest Army  
Mr. Lou Ruberton Army  
Dr. Mike Fischl Army Research Institute

5. Discussion: Dr. Valentine reported to the Steering Committee on current status of ASVAB 5, 6, and 7 development. It is anticipated that experimental copy (for norming use) will be delivered to AFHRL/PES by Defense Printing at Kelly on 18 Jul 75. Normative testing will begin as soon after that as materials can be distributed to testing locations. Normative data needs from AFEES will be communicated to Mr. Ruberton for Gen Forrest since they have indicated that they will assure prompt AFEES response to needs (in the past, this has been a problem). It was pointed out that, in a few content areas, the available item pool for these forms did not yield adequate easy items to achieve the desired .5 difficulty level in the mobilization population (e.g., Math Knowledge is, essentially an Algebra test; many cases simply don't understand algebra). Added difficulty in these areas is no particular concern to Air Force since the components involved fall into composites which, typically, entail AI's of 60 or 80 and above (Navy had not indicated any problem either). However, Dr. Fischl says that these scales are problems for the Army since they use them in screening at levels as much as 1 S.D. below the mean. ARI wished to offer substitutes from their Files for some of the items in these scales (note: all Labs were asked to offer item pool candidates prior to item analysis runs, but ARI choose not to offer input at that time). Dr. Valentine pointed out that, in view of time schedules, Normative print runs could not be stopped, and any substitutes would have to be inserted as "staple overs" on deleted items. Substitutions for Army benefit were accepted by DoD. (Dr. Valentine

visited ARI in the afternoon to obtain, and bring back to San Antonio, their substitutions; they were not all available at that time, and as of noon on 11 July they are still not all available ).

Procedures for verifying integrity of testing programs were discussed and Mr. Snull directed that a plan for routine verification be generated at the next Steering Committee meeting. He also requested copies of the service documents which detail proper and acceptable testing standards. He also wishes to provide a standard brochure to examiners to inform them about the nature of the test prior to their taking it. Dr. Valentine pointed out that AFV'G already has such a pamphlet which might serve for production as well.

Question of additional test Forms, (8, 9, and 10) and of "scrambled" versions of 1, 6, and 7 to give infinite forms and keys to keep track of was brought up. Steering Committee is determined to have this. Dr. Valentine pointed out that 8, 9, and 10 will be produced under contract. Scramblings of 5, 6, and 7 will start when the basic forms are well in hand.

Question of test length (time) and its impact on high school testing was brought up. Essentially the battery is about 30 minutes longer than desirable for high school scheduling; elimination of the Army Classification Inventory (ACI) would solve this problem. Scores on ACI will not be reported to counselor (as per Army), but they are used in computation of some Army production composites. AFV'G has requested deletion of ACI from the high school form. Army is adamant that all testing must include it. DoD's position is that: (a) it was understood from the start that the test would be longer in its revised configuration, (b) Army insists it must have ACI, (c) therefore, ACI will be a part of all forms.

Exploration of impact of recent OASD(MR&A) directives re centralization of all testing at AFEES on 1 Jan 76 elicited the information from Gen. Forrest that they're not certain how this will work, what its impacts will be, or even that it will be in full effect by 1 Jan 76. With regard to the logic of implementing test forms on 1 Oct 75 and centralizing testing on 1 Jan 76, Mr. Snull acknowledges that it would be best to centralize with new forms but says he'll not approach Mr. Brehm about it; he indicated that 1 Oct really means Oct -- possibly 30 Oct.

6. Conclusions/Recommendations: In these conclusions, information re events subsequent to the meeting is included because of its impact on conclusions and current actions:

(a) Guidance from Col Emmanuel (thru Maj Sellman) has been received to give the Army (1) ACI in the battery and (2) their requested item substitutions. Final Army substitutions were dictated via telecom to PES late on 11 July 75. They wish to make substitutions (ranging from two to six items each) in 10 scales of all three forms (i.e., a total of 30 scales are involved). After taking the substitutions into account, average scale difficulties will be about .60 and they will discriminate mainly in low ranges.

(b) NPRDC was informed of Army desire to make item substitutions; they were about to run copies of the tests for input to their validation studies. Mr. Swanson and Dr. Wiskoff at NPRDC called Dr. Valentine on the afternoon of 11 July 75 to discuss this. They were satisfied with the scales as originally configured and quite disturbed about them as amended by Army. Their needs are much like those of the Air Force; i.e., while the three components of AFQT, which are used for screening need to discriminate at an easy level, other scales are used by them for classification and require more top. They are probably going to protect the Army modifications through Navy channels. Consequently, these issues may still be in controversy, and may impact on time. After looking at Army substitutes, the undersigned is in essential agreement with the Navy Lab's position.

(c) To cover us both ways, Mrs. Massey, Mr Cannon and Mr Reed have been asked to expeditiously prepare, "staple-overs" of Army subs for Normative booklets and to prepare revised master copy, but to maintain good master of present form. The undersigned has talked to Mr Martin about this and he indicates that his section's services are promptly available.

*Lonnie D. Valentine, Jr.*  
LONNIE D. VALENTINE, JR., Chief  
Selection and Classification  
Systems Branch

Cy to: AFHRL/DO  
Maj Sellman, DPXYO  
(Randolph)  
AFVTG/CC  
Mrs Massey, PES

DEPARTMENT OF THE AIR FORCE  
Headquarters Air Force Military Personnel Center

MEMO FROM

THE OFFICE OF THE Evaluation and  
Testing Division

TO: ODASD(PP&M) (Maj Johnson) DATE: 8 Aug 75

Attached for your information is a talker which summarizes the results of the 7 August 1975 ASVAB Working Group meeting.

Lonnie Valentine, AFHRL, is prepared to attend the ASVAB Steering Committee meeting to discuss his ideas for splitting the ACI into separate test booklets. We have requested guidance on his attendance from both Gus Lee and Nick Milanovich; they have informally indicated that he will be invited.

If you have any more questions on this matter, please call.



WAYNE S. SELLMAN, Major, USAF  
Ch, Personnel Testing



**SUBJECT: Service Conflicts Over ASVAB**

**- Background**

- ASVAB working group met at AFHRL on 7 August 1975
  - chaired by AFMPC
  - representatives from AFMPC, AFHRL, Bureau of Naval Personnel, Naval Personnel and Training Research and Development Center, HQDA, Army Research Institute, and AFVTG
  - issues discussed
    - length of testing time
    - inclusion of Army Classification Inventory (ACI) in ASVAB-5 (high school version)
    - easy vs hard items

**- Discussion**

- length of testing time
  - AFVTG states that ASVAB-5 is too long (3 hours, 5 minutes) for use in high schools
    - test should be no longer than 2 hours, 45 minutes, preferably 2 hours, 30 minutes
  - working group explored various alternatives for shortening testing time
    - delete ACI
    - eliminate items from subtests
    - arbitrarily shorten testing time for subtests without empirical determination of times required
    - have students precode answer cards before testing sessions
    - have testers code answer cards after testing sessions
  - last four solutions were rejected as being impractical
- inclusion of ACI in ASVAB-5
  - AF, Navy, and AFVTG position is that ACI should be deleted from ASVAB-5

- AFVTG reports that education specialists assigned to Army and Navy recruiting commands believe ACI to be inappropriate for high school use
- all Navy education specialists assigned Navy Recruiting Command met in San Diego 21-25 July
- Army education specialists assigned to southeastern Interservice Recruitment Committees (IRCs) met in Atlanta 28 July-1 August
- content of ACI (weapons, sports, outdoors, male orientation) offensive to high school counselors and students
  - offensive items have now been "cleaned-up" by ARI
- interest inventory not appropriate as part of aptitude test
  - may be invasion of privacy
  - difficult to report and interpret to counselors and students
    - unless reported, may be perceived as experimental test using high school students as experimental subjects
- Army position is that ACI must be included in ASVAB to preclude supplemental testing sessions
  - ASVAB must yield same scores from high school testing as from Service production testing
    - allows Army to have full set of scores for enlistment and classification into military occupations
- easy vs hard items
  - Army has recommended that easier items be included in tests
    - believe easier items will lead to more effective differentiation among their low-ability personnel
    - have provided those easier items for inclusion

- Navy, on the other hand, believes the easier items, if included, would preclude differentiation among their brighter personnel and thus impact on the efficiency of their classification
  - higher ability personnel would answer all easy items correctly
  - AF leans to more difficult versions of test but could live with easier items
- Resolution of issues
  - length of testing time
    - no resolution of this issue; no acceptable means of reducing testing time was determined
    - even if one of techniques to shorten testing time were feasible, problem of the appropriateness of ACI remains
      - however, deletion of ACI solves testing time problem
  - inclusion of ACI in ASVAB-5
    - no resolution of this issue
      - AF, Navy, and AFVTG support deletion
      - Army maintains position that ACI should stay in test
  - easy vs hard items
    - items acceptable to all Services were selected and will be included in test
      - Army and Navy satisfied; AF got exactly what was needed for classification
- Possible solution to ACI problem
  - all Services interested in "interest" information
    - Army only Service to have interest subtest in ASVAB
  - ASVAB could be broken into two booklets
    - booklet I to contain cognitive subtests (aptitude areas)
    - booklet II to contain interest items from all Services
      - Army's ACI
      - AF's Vocational and Occupational Interest Choice Examination (VOICE)

----- Navy's Vocational Interest Inventory (NVII)

- booklet I to be used both for production testing and .  
in high schools
- booklet II administered at AFEES for all accessions  
testing
- booklet II optional in high schools
- available should schools wish to use it
- this suggested approach would solve length of time and ACI  
appropriateness problems

Major W. S. Sellman  
AFMPC/DPMYO  
7 August 1975

(10) 11  
③

## AFHRL MONTHLY ACTIVITY REPORT, AUGUST, 1975

incoming accessions. This will allow greater generalization, but will delay the completion of this project. (PEM/Kantor/3647/7719-02-45)

4. Development and Standardization of Armed Services Vocational Aptitude Battery (ASVAB) Forms 8, 9, 10 (PR FY7624-76-56803). The RFP package was completed and sent to AMD/PMR. Mr. Ferruzzi of AMD/PMR has reported that the contract will be set aside for small business. (PES/Ree/3827/7719-10)

5. Development of Items for Word Knowledge, Arithmetic Reasoning, and Electronics Information Subtests. Work unit is in the progress of being closed out. Final arrangements for payment to the contractor, National Compliance Consultants, Inc. is nearing completion. (PES/Valentine/3827/7719-10-03)

6. Development of Items for Shop Information, Automotive Information, and Mechanical Comprehension Subtests. Work unit is being closed out. Arrangements for final payment to the contractor, National Compliance Consultants, Inc. is nearing completion. (PES/Jensen/3827/7719-10-04)

7. Norming and Standardization of ASVAB-5 on a National High School Sample (PR F41609-75-C-0044). The contractor submitted and amended a sampling plan. After a meeting with the contractor, AFVTG and AFHRL, the sampling plan was approved. A copy of ASVAB-5 and a computer tape to assist in sampling have been delivered to the contractor. The contractor has three contingency schedules for completing the study based upon the time which test administration can begin. (PES/Ree/3827/7719-10-06)

8. Comparison of the Armed Services Vocational Aptitude Battery with Other Tests. The second progress report was received from the contractor. They are experiencing difficulty in obtaining permission to get into the schools. It was indicated they would have a decision from the schools by 7 Sep 75. Copies of commercial tests are in process of being obtained and work is continuing on the study design. (PES/Massey/3827/7719-10-07)

9. Armed Services Vocational Aptitude Battery (ASVAB). ASVAB Form 7 booklets have been shipped to the AFES for normative testing. Forms 5 and 6 are in process of having changes made and are being readied for shipment which should be completed by 4 Sep 75. Test coordinators are making preparation for going into the field during the week of 7-13 Sep 75 to assist and advise at AFES testing sites.

Final copies of Forms 6 and 7 for operational testing have been submitted to ATC for publication.

## AFHRL MONTHLY ACTIVITY REPORT, AUGUST, 1975

Dr. Valentine attended the ASVAB Steering Committee meeting in Washington, D.C., on 21 Aug 75. Issues discussed were:

a. Service concerns re test difficulty - Dr. Valentine reported that service resolution of the difficulty concerns was achieved at a joint working meeting at Lackland on 7 Aug 75.

b. Status of ASVAB 5, 6, and 7 development - Dr. Valentine reported that item changes required have been made in master test copy and have been patched into booklets to be used in collecting normative data.

c. Test time requirements - Battery testing time is two hours and 35 minutes, plus 30 minutes for instructions for a total of three hours and five minutes. Deletion of ACI would reduce this time by about 20 minutes. Other suggested methods of time shaving would not produce the time needed to fall inside the two hours and 45 minutes maximum limit for the high school program. Army suggested that time be arbitrarily shortened to fall within high school limitations while retaining ACI. Dr. Valentine pointed out that scales were already as short as they reasonably should be.

d. Army Classification Inventory as appropriate in the high school program - No decision was made, but Mr. Greenberg will strive to have a Form 5 ACI decision in time for publication to proceed by 15 Sep 75. (PES/Massey/3827/7719-10-10)

10. Correlation Analysis of Form 2 Versus Form 5 of the ASVAB (PR FY7624-75-56007). This contract entered final negotiation and has been awarded to Rothe Developments, Inc. with a starting date of 2 Sep 75. (PES/Rec/3827/7719-10-12)

11. Validation of ASVAB 5 in Post Secondary Vocational Schools (PR F41609-75-0047). The contractor announced changes in the staff attached to the study. Mr. Desind and Mr. Spring have left AMS and Ms L. Barker has taken over direct management of the program. Ms Celio remains as principal investigator. A sampling plan has been submitted by the contractor. Both AFVTC and AFHRL find the plan to be unsatisfactory and informed the contractor of this. The contractor has assured us that the plan will be amended and resubmitted. (PES/Rec/3827/7719-10-13)

12. The Effects of Item-Option Weighting on the Reliability and Validity of the AFVTC Career Qualification Test as Used for the Selection of Pilots. Substantial increases in both reliability and validity have been found for weighted scores over number-right scoring in both the development and cross-validation sample. Investigation of the data indicates that the two

DEPARTMENT OF THE AIR FORCE  
AIR FORCE HUMAN RESOURCES LABORATORY (AFSC)  
LACKLAND AIR FORCE BASE, TEXAS 78236



REPLY TO  
ATTN CF.

PES

24 JUL 1975

SUBJECT: Normative Testing for ASVAB Forms 5, 6, and 7

TO: DAPE-MPE-CS  
(Mr. Lou Ruberton)  
Wash DC 20330

✓ Naval Personnel Research  
and Development Center  
(Mr. Len Swanson)  
San Diego CA 92152

U.S. Army Research Institute  
(Dr. Mike Fischl)  
1300 Wilson Blvd  
Arlington VA 22209

1. In order that a representative sample of the service eligible population, covering the entire AFQT score range, be available for establishment of service norms on ASVAB Forms 5, 6, and 7, it will be necessary to administer these forms at AFEES to obtain data at the lower end of the AFQT distribution. Adequate cases in the upper end of the distribution are obtainable at the service reception and/or basic training centers. In all cases it is important that the ASVAB (5, 6, or 7) be administered in a counterbalanced design with a reference AFQT and that the AFQT score be provided to this laboratory with the ASVAB answer sheets. It is also important that the norm samples include minorities and females. This letter specifies testing to be accomplished. Testing materials are transmitted separately to the testing sites. The Air Force Human Resources Laboratory (AFHRL/PES) is transmitting ASVAB booklets, ASVAB answer sheets, and administrative instructions. ACB materials for AFQT are already "in place" at AFEES.

2. Testing is to be accomplished as follows:

a. Seven hundred and fifty cases each of ASVAB Forms 5, 6, and 7 will be collected through the AFEES. Mr. Ruberton (DAPE-MPE-CS) will arrange for AFEES testing. The reference test for AFEES testing will be the AFQT from the Army Classification Battery, which will be administered with each form of the ASVAB in counterbalanced design (one-half of the cases will be administered ASVAB-5 first and the ACB last; the other half will be administered the ACB first and ASVAB-5 last. This same procedure will be followed with ASVAB-6 and ACB and ASVAB-7 and ACB).

b. Four hundred cases each of ASVAB 5, 6, and 7, with the reference test, will be collected by NPRDC. The reference test to be administered with each form of the ASVAB will be the AFQT portion of ASVAB-2. Counterbalanced order (one-half ASVAB-2 first with the new forms of ASVAB 5, 6, or 7 last and the remaining with the new form of ASVAB first and ASVAB-2 last) will be used in testing. Each sample will include minorities and females.

c. Four hundred cases each of ASVAB Forms 5, 6, and 7 will be collected by AFHRL. The reference test here will be the AFQT portion of ASVAB-2, which will be administered in counterbalanced design with each form of the ASVAB.

3. Examiners at all testing locations will derive the AFQT score from the reference test and record this score in the last two columns of the numeric grid at the bottom of page 1 of the appropriate ASVAB 5, 6, or 7 answer sheet before forwarding.

4. All ASVAB 5, 6, and 7 answer sheets will be forwarded for scoring and analysis to

AFHRL/PES  
Stop 63  
Lackland AFB TX 78236

5. It is critical that this testing be accomplished as expeditiously as possible.

*Lonnie D. Valentine*  
LONNIE D. VALENTINE, JR., Ph.D.  
Chief, Selection and Classification  
Systems Branch

Cy to: AFVTG/RD  
USCG(G-P-1/62)  
Cmndt Marine Corps MP1-20



DEPARTMENT OF THE ARMY  
HEADQUARTERS UNITED STATES ARMY RECRUITING COMMAND  
FORT MONROE, ILLINOIS 62207

Ltr. 11/15  
(X) (14)

USARCPH-A-0

4 AUG 1975

SUBJECT: Administration of Experimental ASVAB Forms 5, 6 and 7

Commander, US Army Northwestern Regional Recruiting Command  
Commander, US Army Southeastern Regional Recruiting Command  
Commander, US Army Southwestern Regional Recruiting Command  
Commander, US Army Midwestern Regional Recruiting Command  
Commander, US Army Eastern Regional Recruiting Command

1. Reference is made to recent telephone conversations between Mr. Lamson, this Headquarters and AFRES representatives, your Headquarters, concerning selection of AFRES to administer experimental ASVAB forms developed by Department of the Air Force.

2. In order that a representative sample of the service eligible population, covering the entire AFQ score range, be available for establishment of service scores on ASVAB Form 5, 6 and 7, it is necessary that the forms be distributed to AFRES to obtain data at the lower end of the AFQ distribution. Cases in the upper end of the distribution will be obtained from other activities. A total of 2,250 (750 for each of the three ASVAB forms) individual scores of applicants/enlistees who attain percentile scores of 50 and below are required from AFRES.

3. The Air Force Human Resources Laboratory, Lackland Air Force Base, Texas, will mail test booklets, answer sheets and administrative instructions on or about 1 August 1975 to those AFRES which have been selected to administer the experimental ASVAB forms (see 1). Regional recruiting command offices for administration of the three experimental test forms are shown below. Request this project be monitored to insure that people assigned to participating AFRES are obtained not later than 29 August 1975.

|           | NE  | SE  | FW  | SW  | W   |
|-----------|-----|-----|-----|-----|-----|
| Exam Form | 124 | 124 | 100 | 100 | 100 |
| Total     | 550 | 510 | 570 | 500 | 370 |

4. Recruiters coordination between AFRES and appropriate regional recruiting offices is required to insure that the project is carried out in accordance with the requirements for recruitment and administration of the experimental test forms. The project is to be completed and the data submitted to the AFRES by the end of the project.

USAFPM-A-0

SUBJECT: Administration of Experimental ASVAB Forms 5, 6 and 7

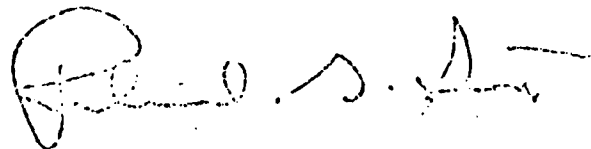
Overnight lodging of applicants/enlistees solely for purposes of this additional testing requirement is not authorized.

5. The experimental tests will be administered to applicants/enlistees, including a proportional representation of minorities and females, who have achieved AFQT percentile scores of 50 and below, as derived from qualification tests currently used for enlistment purposes. It is important that 50% of the individuals be tested with the experimental ASVAB forms before they are administered the current enlistment qualification test. Those tested with the experimental forms who subsequently achieve an AFQT percentile score of 51 or higher on current qualification tests will not be counted against the quotas provided in paragraph 3, above. Testing sessions will be supervised to insure that adequate effort is made by examinees for an accurate measurement of their capability.

6. It is contemplated that representatives from the military research laboratories will be visiting most of these AFPLS participating in this project. A copy of ACB answer sheets completed by individuals who have been tested with the experimental ASVAB forms will be furnished to these representatives upon request.

7. Care will be taken to insure that the percentile score attained from the current enlistment qualification test is recorded in the last two columns of the numeric grid at the bottom of page 1 of the appropriate ASVAB 5, 6 or 7 answer sheet. All ASVAB 5, 6 and 7 answer sheets (including those pertaining to individuals who attained a percentile score of 51 or higher on current production tests after taking the experimental test) will be forwarded, on a weekly basis, for scoring and analysis to AFHRL/PES, Shop G3, Lackland AFB, TX 78236.

FOR THE COMMANDER:



1 Incl  
as

RICHARD S. SHEET  
Colonel, GS  
Chief of Staff

USARCM-A-0

SUBJECT: Administration of Experimental ASVAB Forms 5, 6 and 7

CF:

HQDA (DAPE-MPE-CS)

HQ Marine Corps (Code MRE-2)

HQ Marine Corps (Code MPI-20)

COMNAVJUTCOM

Cdr, USAFPC/DPMIPA

Cdr, USAF Refg Svc

Army Research Institute

✓ Naval Pers Res and Development Ctr

Air Force Human Resources Lab

AFEECS DESIGNATED TO ADMINISTER  
EXPERIMENTAL ASVAB FORMS 5, 6 AND 7

NORTHEAST

Baltimore, MD  
Newark, NJ  
Philadelphia, PA  
Pittsburgh, PA  
Springfield, MA  
Syracuse, NY

SOUTHEAST

Atlanta, GA  
Ft Jackson, SC  
Jacksonville, FL  
Louisville, KY  
Montgomery, AL  
Raleigh, NC  
Richmond, VA

SOUTHWEST

San Antonio, TX  
Dallas, TX  
Kansas City, MO  
New Orleans, LA  
Oklahoma City, OK  
Denver, CO

MIDWEST

Chicago, IL  
Detroit, MI  
Cleveland, OH  
St Louis, MO  
Milwaukee, WI  
Minneapolis, MN

WEST

Los Angeles, CA  
Oakland, CA  
Phoenix, AZ  
Seattle, WA

(16) ~~65~~

ANALYSIS REQUEST AND ROUTING FORM *PES/Massey*

SM Code No. 5700

|  |                  |            |
|--|------------------|------------|
| A. Job Order Nr. <u>77191010</u>                               | F. Items         | Pg         |
| B. Title <u>Service Norms for ASVAB Forms 5, 6, and 7</u>      | 1. Notes         | <u>1</u>   |
|  | 2. Gen'l Descrip | <u>1</u>   |
|  | 3. Population    | <u>1</u>   |
| C. Requesting Scientist <u>Mrs. Massey &amp; Dr. Valentine</u> | 4. Sample        | <u>1</u>   |
| Div <u>PES</u> Phone <u>3827</u> Office No. <u>A-32</u>        | 5. Data Location | <u>1</u>   |
| D. Date submitted <u>7 Oct 75</u>                              | 6. Variables     | <u>1-2</u> |
| E. Date needed <u>NLT 10 Nov 75</u>                            | 7. Products      | <u>3</u>   |

G. Coordination: Requesting Div Dr. L. S. Smith SM       

H. Priority Date 012101 Nov 75

I. SM Date accepted 9 Oct 75 by       

Audit by:        Date forwarded        by       

AFHRL FORM  
FEB 70

6

REPLACES PRL FORM 3 OCT 67 WHICH IS OBSOLETE.

## F. Items

1. Notes: Purpose of this request is to establish service norms for forms 5, 6, and 7 of the Armed Services Vocational Aptitude Battery. Implementation of these forms on 1 Jan 76 has been directed by OASD(MR&A). Norms must be established early enough to allow for dissemination of conversion tables by implementation. At this time, normative data are being collected. This request is submitted to allow some advance planning and programming by SM.

2. General Description: Three normative samples are being collected (1 each for the three test forms [5, 6, and 7]). Cases in each of these samples come from three sources - AFES, Navy Recruit Training Centers, and Lackland AFB. With each experimental administration of the new ASVAB's, AFQT scores are also being collected. These AFQT's are scored at AFES and coded on the experimental ASVAB form; at Lackland and the Navy Recruit Training Centers WK, AR, and SP from ASVAB-2 is administered on a scannable form; an AFQT will be derived from these for entry on the experimental answer sheets. These AFQT's must be scored so they can be coded back onto the experimental ASVAB in PES. Attachment 1 is a copy of the key for this purpose (coded on an answer sheet), and attachment 2 is the conversion table for AFQT. Attachments 3, 4, and 5 are keys for ASVAB-5, 6, and 7, respectively (coded on answer sheets).

Remainder of the study will involve scoring experimental ASVAB's, selecting AFQT stratified samples, formation of composite scores, distributions, and computation of means, standard deviations, intercorrelations, and KR-20 reliabilities. Because of time considerations, it is imperative that work through the distribution stage have precedence over other computations since these are essential for establishing conversion tables.

3. Population: Service eligible youth.

4. Samples:

- (1) Approximately 1500 cases tested on ASVAB-5.
- (2) Approximately 1500 cases tested on ASVAB-6.
- (3) Approximately 1500 cases tested on ASVAB-7.

5. Data Location: To be provided by PES when data collection is completed (expected 20 Nov 75)

6. Variables:

### ASVAB Subtests

- (a) Part 1, General Info.
- (b) Part 2, Numerical Ops.

- 11'
- (c) Part 3, Attention to Detail
  - (d) Part 4, Word Knowledge
  - (e) Part 5, Arithmetic Reasoning
  - (f) Part 6, Space Perception
  - (g) Part 7, Math. Knowledge
  - (h) Part 8, Electronics Information
  - (i) Part 9, Mechanical Comprehension
  - (j) Part 10, Gen. Science, Biological
  - (k) Part 10, Gen. Science, Physical
  - (l) Part 10, Gen. Science, Total
  - (m) Part 11, Shop Information
  - (n) Part 12, Automotive Information
  - (o) Part 13, Class. Inv., CA
  - (p) Part 13, Class. Inv., CC
  - (q) Part 13, Class. Inv., CE
  - (r) Part 13, Class. Inv., CM

#### Reference Measure

- (s) AFQT\*\*

#### ASVAB Raw Composites

- (t) var (d) + var (e)
- (u) var (e) + var (h)
- (v) var (u) + var (g) + var (l)
- (w) var (u) + var (f)
- (x) var (u) + var (m) + var (i)
- (aa) var (x) + var (q)
- (bb) var (t) + var (c)
- (cc) var (bb) + var (o)
- (dd) var (c) + var (d) + var (b)
- (ee) var (e) + var (j) + var (i) + var (n)
- (ff) var (e) + var (m) + var (f)
- (gg) var (n) + var (g) + var (m) + var (h)
- (hh) var (gg) + var (r)
- (ii) var (i) + var (n) + var (g)
- (jj) var (i) + var (g) + var (m)
- (kk) var (i) + var (m) + var (n)
- (ll) var (e) + var (m) + var (f) + var (c)
- (mm) var (ll) + var (p)
- (nn) var (e) + var (i) + var (f)
- (oo) var (nn) + var (d)
- (pp) var (e) + var (a) + var (g) + var (h)
- (qq) var (pp) + var (o)
- (rr) var (a) + var (n)
- (ss) var (rr) + var (o)
- (tt) var (c) + var (g) + var (j)
- (uu) var (d) + var (e) + var (f)

\*\*For AFES cases this is coded on the answer sheet in Cols. 15 and 16 on side 1.  
For HRL and NPTRC cases AFQT must be scored from scannable answer sheets and then be returned to PES to be transcribed to the ASVAB answer sheets.

7. Products:

(a) For cases tested by AFHRL and NPTRC, score and convert AFQT (var [u]) using the attached key and conversion table. Report a roster of these to PES for transcription to ASVAB answer sheets.

ALL REMAINING OPERATIONS ARE TO BE PERFORMED FOR EACH OF THE THREE EXPERIMENTAL ASVAB FORMS (5, 6, & 7) SEPARATELY.

(b) Score variables (a) through (r) as per attached keys. Read var (s) from the answer sheet, and generate variables (t) through (uu).

(c) For the first (tens position) character of variable (s) (AFQT), obtain a count of cases in each AFQT decile (i.e., 01-09; 10-19; 20-29; ... 90-99). If these all equal 100 or more, proceed to (d) below; otherwise consult T/S before continuing.

(d) Via random case selection, discard cases to yield a rectangular AFQT decile distribution. I.E., discard cases from the over-represented deciles to yield a sample with N in each AFQT decile equal to N in the decile which had the lowest count in (c) above.

(e) For the sample generated in (d) above, tally and report one way score distributions for variables (a) through (uu). Report both frequencies and cumulative percentages (cumulated from low to high score). This step is the study's highest priority output.

(f) Report intercorrelations, means, and standard deviations for variables (a) through (uu).

(g) For variables (a), and (d) through (n), obtain correct response probabilities for all items and compute and report KR-20 reliabilities.

5 Atch

1. AFQT Key
2. AFQT Conversion Table
3. ASVAB 5 Key
4. ASVAB 6 Key
5. ASVAB 7 Key



771912 10

MEMO

14 Oct 1975

SUBJECT: Amendment to WR #5700

TO: PES  
PED  
SM  
IN TURN

1. Code variables t - uu as follows:

t       $GT = WK(d) + AR(e)$   
u       $E-H = AR(e) + EI(h)$   
v       $E-NM = AR(e) + EI(h) + MK(g) + GS(l)$   
w       $E-F = AR(e) + EI(h) + SP(f)$   
x       $E-A_1 = AR(e) + EI(h) + SI(m) + MC(i)$   
aa       $E-A_2 = AR(e) + EI(h) + SI(m) + MC(i) + CE(q)$   
bb       $Cl-A_1, M = WK(d) + AR(e) + AD(c)$   
cc       $Cl-A_2, M = WK(d) + AR(e) + AD(c) + CA(o)$   
dd       $Cl-N, F, H = AD(c) + WK(d) + NO(b)$   
ee       $GM-A, M = AR(e) + GSB(j) + MC(i) + AI(n)$   
ff       $GM-H = AR(e) + SI(m) + SP(f)$   
gg       $MM-A_1, M = AI(n) + MK(g) + SI(m) + EI(h)$   
hh       $MM-A_2, M = AI(n) + MK(g) + SI(m) + EI(h) + CM(r)$   
ii       $MM-H = MC(i) + AI(n) + MK(g)$   
jj       $M-N = MC(i) + MK(g) + SI(m)$   
- kk       $M-F = MC(i) + SI(m) + AI(n)$   
ll       $CO-A_1, M = AR(e) + SI(m) + SP(f) + AD(c)$   
nnn       $CO-A_2, M = AR(e) + SI(m) + SP(f) + AD(c) + CC(p)$   
nn       $CO-H = AR(e) + MC(i) + SP(f)$   
oo       $SC-A, M = AR(e) + MC(i) + SP(f) + WK(d)$



APPENDIX C

REFERENCES

STANDARDIZATION CONCERNS IN  
THE FIRST TWO YEARS

(1) and  
(2)

## MINUTES

### ASVAB WORKING GROUP MEETING

8 APRIL 1976

1. On 8 April 1976, an ASVAB Working Group meeting was held at the Navy Personnel Research and Development Center, San Diego, California. Attendees are shown at Attachment 1.

2. The following topics were discussed:

a. Consideration of ASVAB Validation Needs and Development of R&D Plans. Dr. Marty Wiskoff, Navy Personnel Research and Development Center (NPRDC), surfaced the problem that an increasing number of mental Category Is and IIs were entering the Navy. He suspected that ASVAB-6/7 might be overestimating AFQT scores. If this were so, it would result in the misclassification of recruits with subsequent higher attrition from technical schools. Attachment 2, provided by Mr. Lou Ruberton, HQ DA, presents data which supports Dr. Wiskoff's contention concerning increased accessions of higher category personnel.

Two possible explanations were explored. Incidents of test compromise might be leading to erroneously high scores. Alternatively, there is some evidence that during experimental testing at the AFEES for standardization purposes, time requirements for subtest administration were not strictly adhered to. As evidence, Dr. Mike Fischl, Army Research Institute (ARI), noted that in one of his current studies where both ASVAB-6 and ACB scores are available, Attention to Detail

(AD), a speeded clerical test, correlated higher with the power tests in ASVAB than with their counterparts in ACB. If this timing problem did occur, it could cause an overestimation of scores. To determine if the latter condition exists, each of the Service labs will perform statistical analyses to check the calibration of the test. Target date for completion of these analyses is 10 May 1976.

In addition, each Service lab will develop a plan for validating ASVAB 6/7. These plans, scheduled for completion by 10 May 1976, will include procedures for validation by sex and race and will incorporate guidance provided by the Equal Employment Opportunity Council's "Guidelines on Employment Selection Procedures" as they pertain to test validation reports. Then, as validation progresses, reports of documentation will be published beginning in January 1977 with subsequent reports scheduled at six-month intervals. This variable time frame is required because of the varying length of technical courses and student loads. Further, consideration is being given to the feasibility of publishing DoD/joint service validation reports. These reports would present each service's data, but would also include discussion which would integrate the data to demonstrate ASVAB utility from a DoD point of view.

b. Review and Discussion of Recent GAO Recommendations for the Establishment of Common Composites and Their Possible Impact on ASVAB R&D. After a general discussion on common composites

and their possible impact on service classification, it was decided that each service, as part of its validation studies, would determine the usefulness of the other services' composites for predicting success in their technical courses. In addition, each service would empirically investigate the establishment of new composites based on ASVAB 6/7 results. Once these analyses have been completed, realistic assessment of the efficacy of the various composites can be accomplished as well as a determination of the feasibility of using common composites. In this regard, the cost-effectiveness of each set of service-unique composites plus common composites can be determined in terms of the accuracy and efficiency of classification decisions.

c. Consideration of Test Security and Compromise Problems.

Major C. Lockwood, Military Enlistment Processing Command (MEPCOM), presented the current status of ASVAB compromise cases. It was noted that at this time the extent of compromise around the country is unknown. Major Lockwood did indicate that because of compromise new versions of the AFQT subtests (word knowledge, arithmetic reasoning and space perception) were needed. Dr. Lonnie Valentine, Air Force Human Resources Laboratory (AFHRL), agreed to provide three new versions of AFQT to MEPCOM by 15 August 1976 with the understanding that these would be pulled directly, and nearly intact, from previous AFQTs and ASVABs.

d. Structure and Content of Future ASVAB Revisions. Dr. Lonnie Valentine described options for structure of future

ASVAB forms. His recommended approach is to:

(1) Develop each subtest separately; analysis at the development stage need only assure that the subtest is comparable to its predecessor subtest.

(2) Norm each subtest separately, converting to a normal standard metric; all composites would then be formed as sums (either unit or differentially weighted as required) of these converted scale scores.

Advantages of such an approach over classical battery development include:

(a) Less lead time required to develop new subtests.

(b) Less experimental testing time required in the AFES to establish test norms.

(c) New versions of particular scales could be developed and substituted into the battery without disturbing the other subtests or the meaning of composites.

(d) Once various forms of the different subtests are available, they can be grouped in varying combinations thus providing a large number of unique forms of the battery. Such formulation of unique versions should serve as a guard against compromise. This would also eliminate "scrambled" versions of subtests, providing new items sets in each new battery version.

There was general consensus that this plan had merit; Dr. Mike Fischl, ARI, wished to defer final decision until the May meeting of the Working Group in order to consider whether there were technical problems with the plan, specifically with respect to composite reliability.

Moreover, there was agreement that arrangement of subtest order for future forms would be accomplished in conjunction with MEPCOM in order to simplify and facilitate AFEEs processing

e. Consideration of the Use of Interest Measures by the Services and Their Possible Inclusion in ASVAB. The Navy and Air Force indicated that each was working on its own version of an interest inventory, but that neither would be completed in the immediate future. Accordingly, there were no plans to include the interest inventories in ASVAB. The Army interest test, Army Classification Inventory (ACI), is already contained within ASVAB-6/7. Plans call for its continued inclusion in the production tests. However, it will not be incorporated within test forms used in the high schools.

f. Consideration of Research Requirements Relevant to the Establishment of the Value of the DoD High School Testing Program to the Various Services. Col James Rodeen, AFVTG, led a discussion concerning ongoing ASVAB research. Projects included validation of ASVAB for civilian vocational/technical schools, comparison of ASVAB-2 with ASVAB-5, comparison of ASVAB-5 with General Aptitude Test Battery (GATB) and Differential Aptitude Test (DAT), and standardization of ASVAB-5 for a civilian high school population. Although some delays have been experienced, work continues.

The discussion then turned to the efficacy of the DoD High School Testing Program as a vehicle for procuring recruits for the various services and possible ways to research it. Col



Rodeen expressed his belief that this was not an appropriate topic for the Working Group, but rather was more in the province of MEPCOM. The Working Group agreed and terminated the discussion.

ATTENDEES  
ASVAB WORKING GROUP MEETING

8 APRIL 1976

| <u>NAME</u>           | <u>ORGANIZATION</u>                             | <u>TELEPHONE NO.</u> |
|-----------------------|---|----------------------|
| ABRAHAMS, Dr Norman   | NPRDC<br>San Diego, CA                          | A: 933 2400          |
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| BURT, Mr John         | U.S. Coast Guard Institute<br>Oklahoma City, OK | (405) 686 241        |
| DOUGHERTY, Mr Jack    | Navy Recruiting Command<br>Arlington, VA        | A: 222 4889          |
| FISCHL, Dr M. D.      | Army Research Institute<br>Arlington, VA        | A: 224 4020          |
| HODGES, Mr Charles    | NPRDC<br>San Diego, CA                          | A: 933 2181          |
| MORAN, Lt William     | Hdqtrs, Coast Guard<br>Wash, DC                 | (202) 426 138        |
| HOUTZ, Mr John        | USAREC<br>Ft. Sheridan, IL                      | A: 459 2675          |
| KNUTSON, Mr Walter E. | MEPCOM<br>Ft. Sheridan, IL                      | A: 459 2973          |
| LOCKWOOD, Maj C. J.   | MEPCOM<br>Ft. Sheridan, IL                      | A: 459 2505          |
| MASSER, Mr Richard    | AFVTG<br>Randolph AFB, TX                       | A: 487 4181          |
| McMASTER, Lt Tim R.   | BUPERS (Pers-551)<br>Wash DC                    | A: 224 1907          |
| RODEEN, Col James     | AFVTG<br>Randolph AFB, TX                       | A: 487 4181          |
| RUBERTON, Mr Louis A. | HQ DA, DAPE-MPE-CS<br>Wash, DC                  | A: 225 0836          |
| RYALS, Cdr James      | NPRDC<br>San Diego, CA                          | A: 933 7109          |

| <u>NAME</u>             | <u>ORGANIZATION</u>             | <u>TELEPHONE NO.</u> |
|-------------------------|---------------------------------|----------------------|
| SELLMAN, Maj W. S.      | AFMPC/DPMYO<br>Randolph AFB, TX | A: 487 4525          |
| SWANSON, Mr Leonard     | NPRDC<br>San Diego, CA          | A: 933 2181          |
| VALENTINE, Dr Lonnie D. | AFHRL<br>Lackland AFB, TX       | A: 473 3827          |
| WISKOFF, Dr Martin      | NPRDC<br>San Diego, CA          | A: 933 7759          |

# FY 76 ACCESSIONS BY MENTAL CATEGORY

## MALE ONLY

|           | I           |     | II  |             | III  |      | IV          |      |
|-----------|-------------|-----|-----|-------------|------|------|-------------|------|
|           | JUL-<br>DEC | JAN | FEB | JUL-<br>DEC | JAN  | FEB  | JUL-<br>DEC | JAN  |
| ARMY      | 3.7         | 2.7 | 4.2 | 24.0        | 23.1 | 27.0 | 65.0        | 65.8 |
| NAVY      | 3.2         | 4.4 | 5.9 | 37.7        | 37.3 | 39.4 | 54.2        | 54.5 |
| MARINES   | 2.4         | 3.0 | 4.2 | 35.1        | 34.2 | 37.9 | 60.0        | 59.2 |
| AIR FORCE | 3.9         | 4.7 | 6.0 | 42.7        | 44.7 | 47.9 | 52.8        | 50.2 |
|           |             |     |     |             |      |      | 0.5         | 0.4  |
|           |             |     |     |             |      |      | 0.5         | 0.5  |

## MALE & FEMALE

|           |     |     |     |      |      |      |      |      |      |     |     |     |
|-----------|-----|-----|-----|------|------|------|------|------|------|-----|-----|-----|
| ARMY      | 6.1 | 5.6 | 5.9 | 28.5 | 27.7 | 30.1 | 58.8 | 59.2 | 56.3 | 6.6 | 7.5 | 7.7 |
| NAVY      | 3.1 | 4.2 | 5.6 | 37.5 | 36.8 | 39.0 | 54.7 | 55.3 | 52.3 | 4.6 | 3.7 | 3.1 |
| MARINES   | 2.6 | 3.1 | 4.3 | 35.9 | 35.3 | 38.7 | 59.1 | 58.2 | 53.4 | 2.3 | 3.5 | 3.6 |
| AIR FORCE | 4.0 | 4.8 | 5.9 | 47.4 | 43.8 | 47.2 | 53.1 | 50.9 | 46.4 | 0.5 | 0.4 | 0.5 |

MINUTES

ASVAB WORKING GROUP MEETING

13 May 1976

1. On 13 May 1976, an ASVAB Working Group meeting was held at the Army Research Institute for the Behavioral and Social Sciences, Arlington, Virginia. Attendees are shown at Attachment 1.

2. The following topics were discussed:

a. ASVAB Norms and the Need for Recalibration. During the 8 April 1976 Working Group meeting in San Diego, the problem surfaced that under ASVAB increasing numbers of mental category Is and IIs were entering the Services. Two possible explanations were explored. Incidents of test compromise might be leading to erroneously high scores. Alternatively, there was also evidence that during experimental testing at the AFEES for standardization purposes, time limits for subtest administration were not strictly adhered to. Since the test examiners had to administer both the regular enlistment test and the experimental ASVAB, they might have scrimped a little on ASVAB testing times in order to facilitate AFEES processing. This would have made the test appear harder than it actually was resulting in the normative conversion tables overcorrecting and thus overestimating mental category scores.

For the past month, each Service lab has been collecting additional normative data to determine if the norms were in need of fine-tuning. During the 13 May meeting the Working Group reviewed those analyses. Results indicated that, in fact, recalibration of the test is in order - a not at all uncommon situation

for a new test. The Service labs are now working on this adjustment and will have it completed and disseminated to MEPCOM and the AFES during June 1976. This will allow percentages in the various mental categories to be recomputed. Individual scores will not, however, be changed in personnel records. One positive note was that accessions data in the lower ability ranges showed negligible mental category change using these norms, even though the rate of mental category I and II accessions was up.

Concomitant to the need for mental category normative adjustment is the possible requirement to recalibrate the Service classification composites. In this regard, it was agreed that each Service lab would consider and accomplish, if required, its own adjustments, with plans for additional standardization testing at the AFES coordinated with MEPCOM.

b. Consideration of ASVAB Validation Needs and Development of R&D Plans. Ms Darryl Lang, HQ Coast Guard, discussed the current status of the Equal Employment Opportunity Council's "Guidelines on Employment Selection Procedures" and initiatives by the Civil Service Commission to develop their own testing guidelines. Since there are nearly three million men and women tested each year for selection into Service, we can expect that our testing procedures will come under scrutiny similar to that of private employers and the Civil Service Commission. In that regard, it is our professional responsibility to ensure our testing practices comply with accepted scientific principles of test development and validation. The Working Group then addressed the feasibility and desirability

of developing our own military guidelines. It was determined that at the present time there was no real requirement for such a document. However, the Group did agree that should the Civil Service Commission ever publish their guidelines, consideration should be given to their applicability for military personnel testing.

Dr. Lonnie Valentine, AFHRL; Dr. Mike Fischl, ARI; Mr. Charlie Hodges, NPRDC; and Mr. Steve Gorman, HQMC, then presented their Service's plans for validating ASVAB - 6/7. These plans, at attachments 2 through 5, specify procedures which include considerations of sex and race. It should also be noted that because of the recalibration efforts discussed above, validation analyses will be somewhat delayed.

c. Structure and Content of Future ASVAB Revisions. At the 8 April 1976 Working Group meeting, Dr. Lonnie Valentine described options for structure of future ASVAB forms. His recommended approach was to:

(1) Develop each subtest separately; analysis at the development stage would assure that the subtest is comparable to its predecessor subtest.

(2) Norm each subtest separately, converting to a normal standard metric; all composites would then be formed as sums (either unit or differentially weighted as required) of these converted scale scores. The advantages of such an approach are detailed in the minutes of the 8 April 1976 meeting.

After discussion, the Working Group approved this proposed approach provided that arrangement of subtest order and design of

all testing materials (i.e. answer sheets, test scoring work sheets and templates) are accomplished in conjunction with MEPCOM in order to simplify and facilitate AFEES processing.

d. Consideration of Test Security and Compromise Problems.

Dr. Lonnie Valentine, AFHRL, presented a status report on a test compromise investigation where xerox copies of the subtests (word knowledge, arithmetic reasoning, and space perception) that comprise the AFQT had been discovered. The ensuing discussion revealed that word knowledge is the subtest most easily compromised. Consideration then centered on whether or not another verbal subtest (i.e. verbal analogy or reading comprehension) less susceptible to compromise could be substituted for word knowledge. Dr. Valentine agreed to investigate alternative verbal subtests but was not optimistic because candidate subtests require considerably more time to complete than does word knowledge. In addition, Dr. Valentine will also determine the feasibility of deriving AFQT scores from subtests other than the three presently in use.

e. Development and Use by Recruiters of Pre-ASVAB Study Materials. Lt Barbara McGann raised the issue of the desirability of DoD providing some sort of ASVAB familiarization material, such as the ASVAB Speciment Set published by the AFVTG, to potential applicants for service. These materials, to be furnished by recruiters, could be used to bring all applicants up to the same level of test wiseness. In addition, their use could assist in controlling the unstandardized practice effect of pre-test study of commercial publications of the "How to Study for the ....."



type as published by the ARCO Corporation. After lengthy discussion, it was decided that this issue would be tabled until the next Working Group meeting when it would again be considered.

3. The next meeting of the ASVAB Working Group will be sponsored by the Air Force and held at the Air Force Human Resources Laboratory, Lackland AFB, San Antonio TX on 29 July 1976.

ATTENDEES  
ASVAB WORKING GROUP MEETING  
13 May 1976

| <u>NAME</u>            | <u>ORGANIZATION</u>                               | <u>TELEPHONE NO.</u> |
|------------------------|---|----------------------|
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| DENBY, Capt Sara P.    | Navy Recruiting Command<br>(Code 23) Arlington VA | A: 222-4381          |
| DOVER, Mr. Edward A.   | HQ MC (MPI)<br>Wash DC                            | A: 224-2074          |
| ELSTER, Mr. Richard S. | BUPERS (Pers-Or)<br>Wash DC                       | A: 224-4404          |
| FISCHL, Dr. M.A.       | Army Research Institute<br>Arlington VA           | A: 224-4020          |
| FITES, Ms Jeanne       | MARDAC<br>Alexandria, VA                          | A: 221-0490          |
| GORMAN, Mr. Steven     | HQ MC (MPI-20)<br>Wash DC                         | A: 224-4166          |
| GRAFTON, Ms Frances    | Army Research Institute<br>Arlington, VA          | A: 224-4469          |
| HODGES, Mr. C.         | NPRDC<br>San Diego, CA                            | A: 933-2181          |
| HORAN, Lt W.           | HQ COAST GUARD<br>Wash DC                         | (202) 426-1389       |
| HOUTZ, Mr. John        | USAREC<br>Ft Sheridan, IL                         | A: 459-2675          |
| KNUTSON, Mr. Walter E. | MEPCOM<br>Ft Sheridan, IL                         | A: 459-2505          |
| LANG, Ms Darryl        | HQ COAST GUARD<br>Wash DC                         | (202) 426-0890       |

|                        |  |             |
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| MCMASTER, Lt T.R.      | BUPERS (Pers 551)<br>Wash DC                       | A: 224-1370 |
| RODEEN, Col James      | MEPCOM<br>Ft Sheridan, IL                          | A: 459-3719 |
| RUBERTON, Mr. Louis A. | HQ DA, DAPE-MPE-CS<br>Wash DC                      | A: 225-0836 |
| SEELEY, Mr. L.         | Army Research Institute<br>Arlington, VA           | A: 224-4020 |
| SELLMAN, Maj W.S.      | AFMPC/DPMYO<br>Randolph AFB, TX                    | A: 487-2978 |
| SUFFA, Mr. F.W.        | ODASD (MPP)<br>Wash DC                             | A: 227-9192 |
| TUCKER, Lt C.W.        | BUPERS (Pers 552)<br>Wash DC                       | A: 224-1350 |
| VALENTINE, Dr. L.D.    | AFHRL<br>Lackland AFB, TX                          | A: 473-3827 |

Army Plans for the Validation of ASVAB - 6/7  
Against Military Occupational Specialty  
(MOS) Training 1976-77

On 1 July 1976, the Army Research Institute (ARI) will begin accumulating ASVAB data (i.e. original test answer sheets, SSAN, race, sex, reception station shipped to, date of shipment, etc) from Armed Forces Examining and Entrance Stations (AFEES) for all Army cases qualifying for enlistment. ARI will then rescore all answer sheets. It is estimated that 10,000 plus cases per month will input. Two or three months' enlistments should suffice, except for a few low-flow MOSs which may require additional months of AFEES data.

First cases will start MOS training (after Basic Combat Training of 8 weeks) by 1 September 1976. Each school will be contacted starting in September to provide criterion data on graduates. Using the most populous and shortest courses first, validity coefficients will be computed for individual ASVAB subtests, and current aptitude area composites against course performance for each MOS school (complete inter-r matrix). Where sample size permits, separate analyses will also be computed for female, minority, and majority groups.

In addition, current Air Force, Navy, and DOD High School Testing Program composites will be correlated against the same Army school criteria using the most appropriate aptitude area composites for each MOS course. Selecting samples of MOSs, a start will then be made to derive independently the most appropriate aptitude area composites for the Army's enlisted job

structure. The above steps are concerned with validating the ASVAB against only a school training criterion. Any decision regarding on-the-job validity has yet to be made.

## AIR FORCE PLAN FOR THE VALIDATION OF ASVAB - 6/7

The purpose of Air Force validation studies with ASVAB - 6/7 will be to (a) assess the validity of the specific subtest scores for predicting success in Air Force basic training and in various technical training courses, (b) assess the validity of the AFQT and the four Air Force classification composites against these same criteria, (c) assess the validity of the composites of the other services, (d) evaluate the utility of various subsets of these composites for the current Air Force classification model (e) explore alternate composites based on subtests and (f) investigate ethnic and sex equity of the various measures.

Using Air Force accessions data since 1 January 1976, regression techniques will be employed to validate subtest and composite scores against basic training, tech training (by course and/or course cluster), and service survival or adaptability criteria. Interaction models will be employed to evaluate prediction equation homogeneity for racial and sex groups. After adequate samples have been accumulated, subtests within the composites will be evaluated to assess the extent of optimum assignment of quality personnel to the various military occupational specialties.

## Navy Validation Plan for ASVAB 6/7

The validation of ASVAB 6 and 7 will be conducted in three general phases: (1) concurrent validation of ASVAB 6 in about 30 Navy Class A schools, (2) predictive validation of ASVAB 6 and 7 in a much larger number of Navy "A" schools, and (3) validation of ASVAB 6 and 7 against criteria of job performance.

### Phase 1: Concurrent Validation of ASVAB 6 against school performance

This phase is well underway. Form 6 of ASVAB was administered, early in the course, to students in 30 schools selected to represent a wide range of Navy ratings. The testing samples obtained ranged from less than 100 in a few small schools to about 300. Testing was done from October 1975 to March 1976.

The school performance criterion, currently being collected, is final school grade in most schools. In some schools with a self-paced instructional mode a criterion of time-to-complete-training will be used. Information on reason for drop will be obtained for each dropped student. Students who are dropped for non academic reasons will not be included in analyses since aptitude or achievement tests are not appropriate for predicting such drops.

Since students in this phase were administered the Basic Test Battery (BTB 8) at the time of enlistment or upon arrival at NTCs, BTB test and composite scores will be obtained for these students as predictors whose validities will be compared to those for ASVAB tests.

Analysis will consist of intercorrelations among ASVAB subtests and composites, BTB subtests and composites, and school criterion variables. Multiple regression analyses will also be done to identify the most valid subset of ASVAB tests for each school. The validities of alternate selector composites will be computed and compared to current ones. Validities corrected for restriction in range will also be computed.

Phase 2: Predictive Validation of ASVAB 6 and 7 against school performance

In this phase ASVAB 6 and 7 scores will be obtained from the enlisted master tape record. The ASVAB scores used will be operational ones obtained at the time of enlistment or during the first week in recruit training. Final course grades will be used as the criterion of school performance where they are available. These will be obtained from NAVPERS 1510.15 school criterion cards, which are forwarded to NPRDC from individual school commands. For some schools with a self-paced mode of instruction special efforts will be required to obtain a time-in-training-criterion if they cannot be obtained from the school criterion cards.

Predictor test data and school criterion data will be collected on a continuing basis. Predictor and criterion data will be merged about December 1976 and sample sizes for each school determined. Schools with sample sizes of at least 100 will be included in the initial data analysis samples.



Analyses will consist of intercorrelations among ASVAB subtests and Navy, Army and Air Force selection composites and school criterion measures. Regression analysis will also be done to identify the most valid set of ASVAB tests for each school and to determine the maximum validity of the ASVAB for each course. Validities of selected alternate composites composed of 2 or more ASVAB subtests will be computed and compared with validities of current composites. Validities corrected for restriction in range will also be computed.

### Phase 3: Validation of ASVAB 6 and 7 against on-job performance

Two prediction models will be used to validate ASVAB Form 5 and 7 against on-job performance. The classic prediction model will be used for all ratings. In this approach the ASVAB test scores as predictors will be related to a global evaluation of on-job performance by a supervisor through a simple index of relationship, the correlation coefficient. For many Navy ratings this prediction model will be the only one that can be used without a major effort that would be far too costly. It has been found useful in many studies whose results are reported by Ghiselli (1966).

It is recognized that the classic validation or predictor model is over simplified in comparison with the complexities involved in predicting human behavior. It does not consider the events between predictor and criterion behavior - such as differences in job duties, situational difference, personal variation in motivation and the like. Consequently, a modified model for test validation described by Dunnette (1963) will also be used for a limited number of ratings.

Personnel in selected ratings will be followed up in the fleet. Information as to job duties, time on the job and other relevant situational variables will be obtained. In addition to global evaluations by supervisors, various behaviorally oriented criteria of performance will be obtained. For example, specific dimensions of job performance, identified through factor analytic studies, will be used for personnel in clerical and administrative ratings, and evaluations by supervisors on each job performance dimension will be obtained as criteria. A search will be made for job performance measures already developed for other studies. These will be carefully considered as on-job criterion measures for validating ASVAB 6/7. Additional criterion measures will be constructed as needed.

Analyses will be performed separately for racial or ethnic subgroups and for men and women when sample sizes are sufficiently large to yield stable results. Samples from different but related ratings may be combined to increase sample sizes to permit earlier analyses.

Attempts will be made to identify other than ethnic or sex subgroups of subjects within a limited group of ratings who are more predictable than others. The literature on the measurement of human performance will be examined to identify variables, such as degree of motivation, that have been found to improve the prediction of job performance.

Dunnette, M.D. A modified model for test validation and Selection Research J. Appl. Psychol., 1963, 47 317-332.

Ghiselli, E.E. The Validity of Occupational Aptitude Tests, New York Willey, 1966.

## MARINE CORPS ASVAB VALIDATION PLAN

### PRELIMINARY OUTLINE

1. Headquarters Marine Corps plans to start accumulating data on Marines in formal schools at the beginning of FY77.
2. Using the most populous and shortest school courses first, current Marine Corps and high school aptitude area composites will be compared against the Marine Corps final grade criterion. Means, standard deviations, and Pearson product-moment correlations will be derived for each school for analysis.
3. Statistically generated composites shall also be derived which most efficiently predict school performance.
4. The above steps are concerned only with validating the ASVAB against school performance.
5. Steps 2 and 3 will be repeated separately for males, females, whites and non-whites where N is over 30.
6. Interim reports will be forwarded to the ASVAB Working Group when available.

ASVAB WORKING GROUP MEETING

PROPOSED AGENDA

1. Recalibration of ASVAB-6/7 Norms
2. ASVAB-6/7 Validations (Report by Each Service)
3. Development of ASVAB-8/9/10
4. New Versions of Armed Forces Qualification Test (AFQT)  
ASVAB Subtests
5. Status of Reprinting ASVAB-6/7
6. Consideration of Test Security and Compromise Problems
7. Development and Use by Recruiters of Pre-ASVAB Study  
Materials
8. Retention and Disposition of ASVAB High School Testing  
Files

AF/DP

18 MAY 1976

SUBJ: ASVAB Recalibration

1. As you recall, effective 1 Jan 1976, the Armed Services Vocational Aptitude Battery (ASVAB) was implemented as the common DOD enlistment test, and the Army became Executive Agent for the centralized management of testing. The Air Force, however, continued as Executive Agent for ASVAB research and development with AFHRL as the lead laboratory. In this capacity, Major Steve Sellman, DPMYO, chairs the ASVAB Working Group, made up of Service testing policy staffers and representatives of the Service R&D labs.

2. On 8 Apr 1976, the Working Group met at the Navy Personnel Research and Development Center, San Diego CA. During the meeting the problem surfaced that under ASVAB increasing numbers of mental category Is and IIs were entering the Services. Atch 1 shows Air Force accessions for Jan - Apr 1976.

3. Two possible explanations were explored. Incidents of test compromise currently under Army investigation might have led to erroneously high scores. Alternatively, there was also evidence that during experimental testing at the AFHRL for standardization purposes, time limits for subtest administration were not strictly adhered to. Since the test examiners had to administer both the regular

enlistment test and the experimental ASVAB, they might have scrimped a little on ASVAB testing times in order to facilitate AFEES processing. This would have made the test appear harder than it actually was resulting in the normative conversion tables (converts raw scores to percentile scores) overcorrecting and thus overestimating mental category scores.

4. For the past month, each Service lab has been collecting additional normative data to determine if the norms were in need of fine-tuning. The ASVAB Working Group met again on 13 May at the Army Research Institute, Arlington, VA, to review those analyses. Results indicated that, in fact, a slight recalibration of the test is in order - a not at all uncommon situation for a new test. The Service labs are now working on this adjustment and will have it completed and disseminated to the AFEES by 1 June. This will allow the spuriously high percentages of mental category Is and IIs to be recomputed and corrected. Individual scores will not, however, be changed in airmen's records.

5. One very positive finding of the analyses was that ASVAB norms were appropriate at the lower ability ranges. In other words, while the test slightly overestimated mental category

Is and IIs, it worked properly for category IIIs and IVs. Thus, we did not access any individual who was not qualified for service.

6. Mr Irv Greenberg, Acting DASD(P&R) and Brig Gen R. S. Sweet, ODASD(MPP) are aware of this situation and are satisfied with on-going actions.

SIGNED :

H. L. Emanuel  
Colonel, USAF  
Dep Asst DCS/Pers for ME

Cy to: AF/DPX

1 Atch  
Jan - Apr 1976  
Accessions by Mental  
Category

JAN-APR 1976 ACCESSIONS BY MONTH, CATEGORY

|               | <u>JAN</u> | <u>FEB</u> | <u>MAR</u> | <u>APR</u> |
|---------------|------------|------------|------------|------------|
| <u>MALE</u>   |            |            |            |            |
| Cat I         | 4.88       | 5.88       | 8.28       | 10.78      |
| Cat II        | 45.08      | 47.28      | 49.98      | 52.78      |
| Cat III       | 49.88      | 46.58      | 41.38      | 36.18      |
| Cat IV        | .48        | .58        | .68        | .58        |
| <u>FEMALE</u> |            |            |            |            |
| Cat I         | 6.38       | 5.48       | 6.48       | 6.68       |
| Cat II        | 38.98      | 42.28      | 46.98      | 44.38      |
| Cat III       | 54.48      | 52.18      | 46.68      | 48.98      |
| Cat IV        | .48        | .38        | .18        | .28        |



DEPARTMENT OF THE AIR FORCE  
AIR FORCE HUMAN RESOURCES LABORATORY (AFSC)  
LACKLAND AIR FORCE BASE, TEXAS 78236



REPLY TO  
ATTN OF

PES

11 JUN 1976

SUBJECT

AFQT Adjustment

TO:

Mr. Len Seeley  
US Army Research Institute  
1300 Wilson Blvd  
Arlington, VA 22209

*Postmark 15th 14 June  
Rec'd 17 June*

1. Data used in the modification of the AFQT conversion were obtained from the administration of ASVAB-6 AFQT composite and AFQT-7 to Air Force and Navy samples, and the administration of ASVAB-6 and one of the earlier versions of the ACB AFQT composite to the Marine Corps sample.
2. Navy and Air Force samples were quite similar along the entire ASVAB-6 AFQT composite score range. The Marine Corps sample was dissimilar, perhaps due to the particular version of the ACB which was used.
3. For each ASVAB AFQT raw score, adjusted percentile scores were determined through an average of the percentile scores across the three service samples.

HARALD E. JENSEN  
Personnel Research Psychologist  
Personnel Research Division

1 Atch  
Conversion Table

*1. 1st time  
2nd time 23 + 11912 23 + 11912  
23 + 11912 23 + 11912*

# CONVERSION TABLE

## ARMED FORCES QUALIFICATION TEST (AFQT) FROM ASVAB 6-7" (Revised Table)

| <u>Raw<br/>Score</u> | <u>Adj Percentile<br/>Score</u> | <u>Raw<br/>Score</u> | <u>Adj Percentile<br/>Score</u> |
|----------------------|---------------------------------|----------------------|---------------------------------|
| 70                   | 99                              | 28                   | 14                              |
| 69                   | 98                              | 27                   | 12                              |
| 68                   | 97                              | 26                   | 11 10                           |
| 67                   | 95                              | 25                   | 09                              |
| 66                   | 93                              | 24                   | 07                              |
| 65                   | 92                              | 23                   | 06                              |
| 64                   | 91                              | 22                   | 04                              |
| 63                   | 89                              | 21                   | 03                              |
| 62                   | 87                              | 20                   | 03                              |
| 61                   | 85                              | 18-19                | 02                              |
| 60                   | 84                              | 0-17                 | 01                              |
| 59                   | 82                              |                      |                                 |
| 58                   | 80                              |                      |                                 |
| 57                   | 77                              |                      |                                 |
| 56                   | 75                              |                      |                                 |
| 55                   | 73                              |                      |                                 |
| 54                   | 70                              |                      |                                 |
| 53                   | 67 3?                           |                      |                                 |
| 52                   | 66 5                            |                      |                                 |
| 51                   | 64 4                            |                      |                                 |
| 50                   | 61                              |                      |                                 |
| 49                   | 59                              |                      |                                 |
| 48                   | 56                              |                      |                                 |
| 47                   | 54                              |                      |                                 |
| 46                   | 52                              |                      |                                 |
| 45                   | 49                              |                      |                                 |
| 44                   | 47                              |                      |                                 |
| 43                   | 44                              |                      |                                 |
| 42                   | 42                              |                      |                                 |
| 41                   | 40                              |                      |                                 |
| 40                   | 38                              |                      |                                 |
| 39                   | 35                              |                      |                                 |
| 38                   | 33                              |                      |                                 |
| 37                   | 31                              |                      |                                 |
| 36                   | 29                              |                      |                                 |
| 35                   | 27                              |                      |                                 |
| 34                   | 25                              |                      |                                 |
| 33                   | 23                              |                      |                                 |
| 32                   | 21                              |                      |                                 |
| 31                   | 20                              |                      |                                 |
| 30                   | 18                              |                      |                                 |
| 29                   | 16                              |                      |                                 |

9 Jun 76

# CONVERSION TABLE

## ARMED FORCES QUALIFICATION TEST (AFQT) FROM ASVAB 6-7

| <u>Raw<br/>Score</u> | <u>AF%</u> | <u>Navy%</u> | <u>Marine<br/>Corps%</u> | <u>Adjusted<br/>Percentile Score</u> |
|----------------------|------------|--------------|--------------------------|--------------------------------------|
| 70                   | 99         | 99           | 99                       | 99                                   |
| 69                   | 98         | 99           | 98                       | 98                                   |
| 68                   | 96         | 98           | 97                       | 97                                   |
| 67                   | 93         | 95           | 96                       | 95                                   |
| 66                   | 91         | 94           | 95                       | 93                                   |
| 65                   | 90         | 93           | 94                       | 92                                   |
| 64                   | 89         | 91           | 93                       | 91                                   |
| 63                   | 87         | 89           | 91                       | 89                                   |
| 62                   | 85         | 87           | 90                       | 87                                   |
| 61                   | 82         | 85           | 88                       | 85                                   |
| 60                   | 81         | 83           | 87                       | 84                                   |
| 59                   | 78         | 78           | 85                       | 82                                   |
| 58                   | 76         | 75           | 84                       | 80                                   |
| 57                   | 72         | 73           | 82                       | 77                                   |
| 56                   | 70         | 70           | 81                       | 75                                   |
| 55                   | 65         | 68           | 79                       | 73                                   |
| 54                   | 63         | 64           | 77                       | 70                                   |
| 53                   | 61         | 62           | 75                       | 67                                   |
| 52                   | 60         | 60           | 73                       | 66                                   |
| 51                   | 56         | 58           | 71                       | 64                                   |
| 50                   | 54         | 55           | 68                       | 61                                   |
| 49                   | 51         | 53           | 66                       | 59                                   |
| 48                   | 50         | 49           | 63                       | 56                                   |
| 47                   | 48         | 47           | 61                       | 54                                   |
| 46                   | 46         | 45           | 58                       | 52                                   |
| 45                   | 42         | 42           | 56                       | 49                                   |
| 44                   | 38         | 41           | 54                       | 47                                   |
| 43                   | 36         | 40           | 51                       | 44                                   |
| 42                   | 33         | 38           | 49                       | 42                                   |
| 41                   | 32         | 36           | 47                       | 40                                   |
| 40                   | 30         | 32           | 45                       | 38                                   |
| 39                   | 29         | 29           | 42                       | 35                                   |
| 38                   | 27         | 28           | 40                       | 33                                   |
| 37                   | 25         | 26           | 38                       | 31                                   |
| 36                   | 22         | 25           | 35                       | 29                                   |
| 35                   | 20         | 24           | 33                       | 27                                   |
| 34                   | 19         | 20           | 30                       | 25                                   |
| 33                   | 18         | 19           | 28                       | 23                                   |
| 32                   | 17         | 17           | 26                       | 21                                   |
| 31                   | 16         | 15           | 24                       | 20                                   |
| 30                   | 13         | 13           | 22                       | 18                                   |
| 29                   | 11         | 11           | 20                       | 16                                   |
| 28                   | 10         | 11           | 18                       | 14                                   |
| 27                   | 09         | 09           | 16                       | 12                                   |

| <u>Raw<br/>Score</u> | <u>AF%</u> | <u>Navy%</u> | <u>Marine<br/>Corps%</u> | <u>Adjusted<br/>Percentile Score</u> |
|----------------------|------------|--------------|--------------------------|--------------------------------------|
| 26                   | 09         | 08           | 14                       | 11                                   |
| 25                   | 08         | 05           | 11                       | 09                                   |
| 24                   | 08         | 03           | 09                       | 07                                   |
| 23                   | 07         | 02           | 07                       | 06                                   |
| 22                   | 06         | 01           | 05                       | 04                                   |
| 21                   | 04         | 01           | 04                       | 03                                   |
| 20                   | 01         | 01           | 03                       | 03                                   |
| 18-19                | 01         | 01           | 02                       | 02                                   |
| 0-17                 | 01         | 01           | 01                       | 01                                   |

For Dr. Fischl

"Straw man" table for ASVAB 7

Two samples were used in developing the table:

1. Navy portion of standardization sample for ASVAB 7  
(N = 371 and 323 respectively)
2. Sample of Navy recruits admitted on Basic Test Battery,  
administered ASVAB 7 at recruit training centers.  
(N = 1334)

The attached table approximates the mental level distribution  
believed to exist in these samples. Conversions below 30 percentile  
point are especially imprecise.

(Suspect that Navy and Air Force samples obtained on retest with  
AFQT 7 in April and May demonstrated de-motivation, particularly  
among less able recruits, causing "over-correction" in the 9 June  
table developed from these samples. Possible ASVAB compromise  
during that period could also be playing its part).

READY - AIM - FIRE!

*Handwritten:*  
From the original  
given San Diego 76  
25 June 76  
1305 hrs

# ASVAB 7

| <u>Raw Score</u> | <u>Percentile Score</u> | <u>Raw Score</u> | <u>Percentile Score</u> |
|------------------|-------------------------|------------------|-------------------------|
| 70               | 99                      | 39               | 42                      |
| 69               | 98                      | 38               | 40                      |
| 68               | 97                      | 37               | 38                      |
| 67               | 95                      | 36               | 36                      |
| 66               | 93                      | 35               | 34                      |
| 65               | 92                      | 34               | 32                      |
| 64               | 91                      | 33               | 31                      |
| 63               | 89                      | 32               | 30                      |
| 62               | 87                      | 31               | 28                      |
| 61               | 85                      | 30               | 25                      |
| 60               | 84                      | 29               | 23                      |
| 59               | 82                      | 28               | 21                      |
| 58               | 81                      | 27               | 19                      |
| 57               | 77                      | 26               | 17                      |
| 56               | 75                      | 25               | 15                      |
| 55               | 73                      | 24               | 13                      |
| 54               | 70                      | 23               | 11                      |
| 53               | 68                      | 22               | 9                       |
| 52               | 66                      | 21               | 7                       |
| 51               | 64                      | 20               | 5                       |
| 50               | 62                      | 19               |                         |
| 49               | 60                      | 18               |                         |
| 48               | 58                      | 17               |                         |
| 47               | 56                      | 16               |                         |
| 46               | 54                      | 15               |                         |
| 45               | 52                      | 14               |                         |
| 44               | 51                      | 13               |                         |
| 43               | 49                      | 12               |                         |
| 42               | 48                      |                  |                         |
| 41               | 46                      |                  |                         |
| 40               | 44                      |                  |                         |

ASVAB 6-7 Norms

14 JULY '76

| <u>PCTLS</u> | <u>Raw</u><br><u>Operational</u> | <u>Raw</u><br><u>Navy</u> | ? |
|--------------|----------------------------------|---------------------------|---|
|--------------|----------------------------------|---------------------------|---|

|    |         |         |       |
|----|---------|---------|-------|
| 99 | 70      | 70      |       |
| 93 | 61      | 66      | 63-64 |
| 92 | 60      | 65      |       |
| 75 | 50      | 56      |       |
| 65 | 45      | (66) 52 | 48    |
| 64 | 44      | 51      |       |
| 50 | (51) 40 | (51) 44 | 42    |
| 49 | 39      | 43      | 41    |
| 31 | 31      | 33      | 32    |
| 30 | (25) 30 | 32      | 31    |
| 16 | (17) 26 | (17) 26 |       |
| 15 | (13) 25 | 25      |       |
| 10 | (11) 24 | (11) 23 |       |
| 9  | 23      | 22      |       |

ART 84 1576

12 July - 6  
 Lon - AF&T ~~correction~~ - Jerry

|                  | 6 mo<br>July-Dec 75<br>(A & B-73) | 6 months<br>Jan-June 76 | 12 mo<br>75 July-June 76 | 1m<br>June 76 |
|------------------|-----------------------------------|-------------------------|--------------------------|---------------|
| Cat I            | 4.6                               | 4.8                     | 4.7                      | 4.1           |
| II               | 23.2                              | 25.4                    | 24.3                     | 6             |
| III <sub>9</sub> | 24.9                              | 18.7                    | 21.7                     | 19            |
| III <sub>6</sub> | 40.0                              | 42.1                    | 41.1                     | 39            |
| IV               | 7.3                               | 9.0                     | 8.2                      | 11.9          |

So: we don't want norms changed - at least  
 not much. (1 point at 3.276; a few at top)



6-1  
EFFECTS OF ASUBA NORMS ON AFQT QUALIFICATION  
Showing Percent AFQT Categories in Jan. 1976 Random Sample  
N = ~~1000~~ 961.

| AFQT<br>Category | EXPECTED<br>% of Cases | ATTAINED PERCENT OF CASES |                      |                             |
|------------------|------------------------|---------------------------|----------------------|-----------------------------|
|                  |                        | Original<br>Norms         | Proposed<br>Revision | Navy Streamline<br>Revision |
| I and II         | 36%                    | 37%                       | 22%                  | 22%                         |
| III              | 34                     | 35                        | <del>37</del><br>35% | 45 1/2%                     |
| IV and V         | 30                     | 28                        | <del>41</del><br>43% | 32 1/2%                     |
| Low IV + V       | 15                     | 15                        | 22%                  | 15%                         |
| V                | 9                      | 11                        | 15%                  | 9%                          |

Percent AFQT Categories in Southern Sample - Robertson - May 1976  
N = 111

| AFQT<br>Category | Expected<br>% of Cases | attained Percent of Cases |                      |                |
|------------------|------------------------|---------------------------|----------------------|----------------|
|                  |                        | original<br>Norms         | Proposed<br>Revision | ACB-73<br>AFQT |
| I and II         | 36%                    | 26%                       | 15%                  | 15%            |
| III              | 34                     | 39                        | 30                   | 43             |
| IV and V         | 30                     | 35                        | 55                   | 42             |
| Low IV + V       | 15                     | 12 1/2                    | 23 1/2               | 23 1/2         |
| V                | 9                      | 10 1/2                    | 12 1/2               | 12             |

2 July 76  
184

## AFQT COMPARISONS

RANDOM SAMPLE-1000 ARMY CASES-ASVAB-JANUARY 1976

Showing percent falling below various cutting points

| CUT     | ORIGINAL<br>NORMS | PROPOSED<br>REVISION | NAVY STRAUHAN<br>REVISION | LR:                          |
|---------|-------------------|----------------------|---------------------------|------------------------------|
| 75 PCTL | 74%               | 86%                  | 86%                       | Do we                        |
| 65      | 63                | 78                   | 78                        | care at                      |
| 50      | 49                | 64                   | 58                        | top?                         |
| 31      | 28                | <del>41</del><br>43  | 32½                       | <del>Common</del><br>varying |
| 16      | 15                | 22                   | 15                        | at 31                        |
| 10      | 11                | 15                   | 9½                        |                              |

N=111

SELECTED SOUTHERN SAMPLE (Robertson) - MAY 1976

Showing percent falling below various cutting points

| CUT     | ORIGINAL<br>NORMS | PROPOSED<br>REVISION | ACB-73 |
|---------|-------------------|----------------------|--------|
| 65 PCTL | 74%               | 85%                  | 85%    |
| 31      | 35                | 55                   | 42     |
| 16      | 12½               | 23½                  | 23½    |
| 10      | 10%               | 12½                  | 12     |

2 JULY 76

# ASVAB 6-7 PROPOSED ARMY CONVERSION

29 July 76

| RAW | PTL   | RAW | PTL    | RAW   | PTL   |
|-----|-------|-----|--------|-------|-------|
| 70  | 99    | 50  | 62     | 30    | 28    |
| 69  | 98    | 49  | 60     | 29    | 25    |
| 68  | 97    | 48  | 58     | 28    | 21    |
| 67  | 96    | 47  | 56     | 27    | 19    |
| 66  | 95    | 46  | 54     | 26    | 16    |
| 65  | 94    | 45  | 52     | 25    | 15    |
| 64  | 93 I  | 44  | 51     | 24    | 12    |
| 63  | 92    | 43  | 50     | 23    | 10 IV |
| 62  | 91    | 42  | 49     | 22    | 8     |
| 61  | 89    | 41  | 48     | 21    | 7     |
| 60  | 87    | 40  | 47     | 20    | 6     |
| 59  | 84    | 39  | 46     | 19    | 5     |
| 58  | 81    | 38  | 45     | 18-18 | 4     |
| 57  | 78    | 37  | 44     | 13-16 | 3     |
| 56  | 75    | 36  | 42     | 8-12  | 2     |
| 55  | 72    | 35  | 40     | 0-7   | 1 II  |
| 54  | 69    | 34  | 37     |       |       |
| 53  | 67    | 33  | 35     |       |       |
| 52  | 65 II | 32  | 33     |       |       |
| 51  | 64    | 31  | 31 III |       |       |

July 26 s

Na

*Accepted 29 Jul 76*

PROPOSED CONVERSION TABLE FOR ARMED FORCES QUALIFICATION TEST (AFQT)  
FROM  
ASVAB-7 (WK + AR + SP)

|       | Raw<br>Score | Percentile<br>Score |       | Raw<br>Score  | Percentile<br>Score |   | Raw<br>Score | Percentile<br>Score |
|-------|--------------|---------------------|-------|---------------|---------------------|---|--------------|---------------------|
|       | 70           | 99                  |       | 48            | 58                  |   | 24           | 11                  |
|       | 69           | 98                  |       | 47            | 56                  |   | 23           | 10                  |
|       | 68           | 97                  |       | 46            | 55                  |   | 22           | 8                   |
| I     | 67           | 96                  |       | 45            | 54                  |   | 21           | 7                   |
|       | 66           | 95                  |       | 44            | 52                  |   | 20           | 6                   |
|       | 65           | 94                  |       | <del>43</del> | <del>51</del>       |   | 19           | 5                   |
|       | 64           | 93                  | 43    | 42            | 50                  | V | 18           |                     |
|       | 63           | 91                  | 42    | 41            | 49                  |   | 17           | 4                   |
|       | 62           | 89                  | 41    | 40            | 48                  |   | 16           |                     |
|       | 61           | 86                  |       | 39            | 47                  |   | 15           | 3                   |
|       | 60           | 83                  |       | 38            | 45                  |   | 14           |                     |
|       | 59           | 80                  |       | 37            | 43                  |   | 13           | 2                   |
| II    | 58           | 77                  | L III | 36            | 41                  |   | 12           |                     |
|       | 57           | 75                  |       | 35            | 39                  |   | 0 - 11       | 1                   |
|       | 56           | 73                  |       | 34            | 37                  |   |              |                     |
|       | 55           | 71                  |       | 33            | 35                  |   |              |                     |
|       | 54           | 69                  |       | 32            | 33                  |   |              |                     |
|       | 53           | 67                  |       | 31            | 31                  |   |              |                     |
|       | 52           | 65                  |       | 30            | 28                  |   |              |                     |
|       | 51           | 64                  |       | 29            | 25                  |   |              |                     |
|       | 50           | 62                  |       | 28            | 22                  |   |              |                     |
| U III | 49           | 60                  | IV    | 27            | 19                  |   |              |                     |
|       |              |                     |       | 26            | 16                  |   |              |                     |
|       |              |                     |       | 25            | 13                  |   |              |                     |

ASVHD 6-1 NORPIS

29 July 26

Effect of three Conversions on January 1976 Sample 76/Army Applicant  
 Assuming a qualification average of 21 RTL (28 raw score)  
 yielding a sample of 776 simulated conversions

881

| ACTUAL     |       | OPERATIONAL NORMS |       |         |       | NAVY PROPOSAL |     |         |       | ARMY PROPOSAL |      |         |  |
|------------|-------|-------------------|-------|---------|-------|---------------|-----|---------|-------|---------------|------|---------|--|
| ACCESSIONS |       | RAW SCORE         |       | PERCENT |       | RAW SCORE     |     | PERCENT |       | RAW SCORE     |      | PERCENT |  |
| CA-T       | 75    | 76                | F     |         |       |               |     |         |       |               |      |         |  |
| I          | 4,620 | 4,620             | 61-70 | 76      | 98.70 | 66-70         | 14  | 16.80   | 64-70 | 32            | 4.10 |         |  |
| II         | 232   | 254               | 45-60 | 300     | 138.7 | 52-65         | 208 | 26.8    | 52-63 | 190           | 24.5 |         |  |
| IIIa       | 249   | 18.7              | 40-49 | 119     | 15.3  | 44-51         | 142 | 23.4    | 43-51 | 205           | 26.4 |         |  |
| IIIc       | 400   | 42.1              | 31-39 | 200     | 25.8  | 33-43         | 244 | 31.4    | 31-42 | 268           | 34.5 |         |  |
| IV         | 7.3   | 9.0               | 24-30 | 81      | 10.4  | 23-32         | 128 | 16.6    | 23-30 | 81            | 10.4 |         |  |
|            | 1003  | 1003              | 776   | 1003    | 776   | 1003          | 776 | 1003    | 776   | 1003          | 776  | 1003    |  |
| IIIa+b     | 6493  | 6083              | 319   | 4110    | 426   | 5487          | 473 | 6093    |       |               |      |         |  |

25 JUL 5

Dr. O. S.

25 July 26 S  
 D. J. O. S.

# APPLICANTS FOR ENLISTMENT

ALPAFEES

Jan. 1976 Random Sample: 961

| <u>Cat.</u> | <u>FY 74*</u> | <u>Jan, 1976<br/>OPERATIONAL NORMS</u> | <u>July 1976<br/>NEW NORMS</u> |
|-------------|---------------|--|--------------------------------|
| <u>I</u>    | 2.1%          | 7.9%                                   | 3.3%                           |
| <u>II</u>   | 20.7%         | 31.2%                                  | 19.8%                          |
| <u>III</u>  | 45.4%         | 33.2%                                  | 49.2%                          |
| <u>IV</u>   | 24.5%         | 16.6%                                  | 18.2%                          |
| <u>V</u>    | 7.3%          | 10.9%                                  | 9.5%                           |

\* From B. Karpinos; data supplied by USAREC, as tabulated by MARDAC

S. 2 Aug 76

PRODUCTION MENTAL TESTING - JANUARY 1975 THROUGH JUNE 1976

NONPRIOR SERVICE MALES

NUMBER TESTED BY SERVICE:

|       | <u>FISCAL YEAR 1975</u> |                | <u>FISCAL YEAR 1976</u> |                |                |                |
|-------|-------------------------|----------------|-------------------------|----------------|----------------|----------------|
|       | <u>3rd Qtr</u>          | <u>4th Qtr</u> | <u>1st Qtr</u>          | <u>2nd Qtr</u> | <u>3rd Qtr</u> | <u>4th Qtr</u> |
| ARMY  | 137 973                 | 122 021        | 111 316                 | 161 490        | 109 053        | 85 785         |
| USMC  | 36 062                  | 29 718         | 28 784                  | 35 259         | 26 007         | 19 238         |
| TOTAL | 174 035                 | 151 739        | 140 100                 | 196 749        | 135 060        | 105 023        |

NUMBER REJECTED BY SERVICE:

|       |        |          |        |        |        |        |
|-------|--------|----------|--------|--------|--------|--------|
| ARMY  | 15 707 | (9 225)  | 13 226 | 22 979 | 25 698 | 23 614 |
| USMC  | 4 991  | (3 076)  | 4 429  | 3 886  | 5 332  | 4 518  |
| TOTAL | 20 698 | (12 301) | 17 655 | 26 865 | 31 030 | 28 132 |

PERCENT REJECTED BY SERVICE:

|       |                 |                  |                 |                 |                 |                 |
|-------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|
| ARMY  | <del>11.4</del> | <del>(7.6)</del> | <del>11.9</del> | <del>14.2</del> | <del>23.6</del> | <del>27.5</del> |
| USMC  | 13.8            | (10.4)           | 15.4            | 11.0            | 20.5            | 23.5            |
| TOTAL | 11.9            | (8.1)            | 12.6            | 13.7            | 23.0            | 26.8            |

SOURCE: AFEEs Operational Workload Report (OPS-9)

Prepared by MEPCT  
28 Jul 1976

# PRODUCTION MENTAL TESTING & JANUARY THROUGH JUNE 1976

## NONPRIOR SERVICE MALES

### NUMBER TESTED BY SERVICE:

| <u>SERVICE</u> | <u>JAN</u> | <u>FEB</u> | <u>MAR</u> | <u>APR</u> | <u>MAY</u> | <u>JUN</u> | <u>TOTAL</u> |
|----------------|------------|------------|------------|------------|------------|------------|--------------|
| ARMY           | 36 642     | 35 332     | 37 079     | 27 364     | 26 961     | 31 460     | 194 838      |
| NAVY           | 14 905     | 15 484     | 16 542     | 12 688     | 11 896     | 14 021     | 85 536       |
| USAF           | 12 752     | 12 322     | 12 791     | 9 673      | 9 156      | 10 493     | 67 187       |
| USMC           | 8 425      | 8 282      | 9 300      | 6 866      | 6 137      | 6 235      | 45 245       |
| TOTAL          | 72 724     | 71 420     | 75 712     | 56 591     | 54 150     | 62 209     | 392 806      |

### NUMBER REJECTED BY SERVICE:

|       |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|
| ARMY  | 8 323  | 8 405  | 8 970  | 7 264  | 7 411  | 8 939  | 49 312 |
| NAVY  | 1 722  | 1 809  | 1 962  | 1 526  | 1 548  | 1 764  | 10 331 |
| USAF  | 2 762  | 2 606  | 2 888  | 2 253  | 2 247  | 2 718  | 15 474 |
| USMC  | 1 701  | 1 680  | 1 951  | 1 592  | 1 482  | 1 444  | 9 850  |
| TOTAL | 14 508 | 14 500 | 15 771 | 12 635 | 12 688 | 14 865 | 84 967 |

### PERCENT REJECTED BY SERVICE:

|       |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|
| ARMY  | 22.7 | 23.8 | 24.2 | 26.5 | 27.5 | 28.4 | 25.3 |
| NAVY  | 11.6 | 11.7 | 11.9 | 12.0 | 13.0 | 12.6 | 12.1 |
| USAF  | 21.7 | 21.1 | 22.6 | 23.3 | 24.5 | 25.9 | 23.0 |
| USMC  | 20.2 | 20.3 | 21.0 | 23.2 | 24.1 | 23.2 | 21.8 |
| TOTAL | 19.9 | 20.3 | 20.8 | 22.3 | 23.4 | 23.9 | 21.6 |

SOURCE: AFES Operational Workload Report (OPS-9)

Prepared by MEPCT  
28 Jul 1976



(9)

LT J. E. MC GANN, USN  
 CNRC/215/692-4185  
 18 June 1976

**SUBJECT:** Migration of Test Scores Obtained on ASVAB 6 and 7

**BACKGROUND:** Since the implementation of full ASVAB testing on 1 January 1976, Navy has experienced an upward migration of mental groups:

**NON-PRIOR SERVICE ACTIVE DUTY (LESS FILIPINOS)  
 MENTAL GROUP PERCENTAGES**

|        | <u>JUL/DEC</u> | <u>JAN</u> | <u>FEB</u> | <u>MAR</u> | <u>APR</u> | <u>MAY</u> | <u>1-15 JUN</u> | <u>JAN-15</u> |
|--------|----------------|------------|------------|------------|------------|------------|-----------------|---------------|
| MGI    | 3.1            | 4.2        | 5.6        | 8.5        | 9.5        | 9.8        | 7.3             | 7.2           |
| MGII   | 37.5           | 36.8       | 39.0       | 44.6       | 45.0       | 42.8       | 38.8            | 41.0          |
| MGUIII | 34.1           | 29.8       | 27.3       | 25.7       | 25.5       | 25.8       | 25.9            | 26.9          |
| MGLIII | 20.6           | 25.5       | 25.0       | 18.3       | 18.0       | 18.9       | 23.3            | 21.7          |
| MGUIV  | 4.6            | 3.7        | 3.1        | 2.8        | 2.0        | 2.7        | 4.7             | 3.1           |

- Navy has also experienced increased attrition that appears to parallel the upward migration of mental groups (Recruit Training Command attrition).

| <u>JAN/FEB</u><br><u>ACC/ATT</u> | <u>FEB/MAR</u><br><u>ACC/ATT</u> | <u>MAR/APR</u><br><u>ACC/ATT</u> | <u>APR/MAY</u><br><u>ACC/ATT</u> |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 7.7%                             | 12.6%                            | 14%                              | 12.7%                            |

(NOTE: Attrition percentage figures incorporate recruit flow through RTC, e.g., the majority of February's attritions will be from January's accessions, etc.).

**DISCUSSION:** No major changes have taken place in the Navy accession process with the exception of the implementation of ASVAB.

- Service researchers identified ASVAB norming problem.
- Met in Washington, D. C. on 13 May 1976 to compare results of service retesting programs.
- Revised AFQT correlation tables for ASVAB 6 and 7 received and reviewed by Navy Personnel Research & Development Center (NPRDC).
- Tables with NPRDC comments telecopied to CNP on 19 June 1976.
- Upon receipt of joint service concurrence, AFHRL will forward to Headquarters, Department of the Army for distribution to AFERS.

**RECOMMENDATION:** Early resolution required.

Foncon of 14 July 1976

From: Dr. Mike Fischl and Len Sealey, ARI A/V 224-4020

To: L. Swanson

Subj: ASVAB 6 - 7 - AFQT conversion table

1. This call was in response to our proposed Strawman AFQT ASVAB 7 conversion table prepared by C. Hodges and telecopied to ARI on 25 July 1976. Sealey has made some comparisons of mental group distributions during the past week or more. The result of their analyses revealed a general satisfaction with the operational AFQT conversion table from ASVAB 6/7.

2. They compared inputs from Jan - June 1975 using AFQT from ACB 73 with Jan - June 1976 using AFQT from ASVAB 6 or 7 with the following results:

| Mental Group | Jan-June<br>1975<br>AFQT from<br>ACB 73 | Jan-June<br>1976<br>AFQT from<br>ASVAB 6/7 |
|--------------|---|--|
| I            | 4.8%                                    | 4.6  |
| II           | 25.4%                                   | 23.2                                       |
| III          | 60.8%                                   | 65.0                                       |
| IV           | 9.0%                                    | 7.5  |

From this they were satisfied with the AFQT-ASVAB 6/7 conversion table. They would like minor changes only in the operational table.

3. They then used operational ASVAB 6/7 data from Jan 1976, scored ASVAB's and converted raw scores using the operational conversion table, the revised AF table (June 9) and the Navy Straw man table with the following results.

| Mental Group | expected %<br>from<br>mobilization<br>distribution | % from<br>operational<br>AFQT from<br>ASVAB | % from<br>AF<br>revision | % from<br>Navy<br>Straw man<br>table |
|--------------|--|---|--------------------------|--------------------------------------|
| I & II       | 36%  | 37%   | 22%                      | 22%                                  |
| III          | 34%  | 35%   | 37%                      | 46%                                  |
| IV & V       | 30%  | 28%   | 41%                      | 32.5%                                |
| Low IV & V   | 15%  | 15%   | 22%                      | 15%                                  |
| V            | 9%   | 11%   | 15%                      | 9                                    |

Fischl says the Navy straw man table works well for Army in the lower part, Mental group IV & V, but not at all at the upper end. I raised the question as to whether the Army's Jan. input did represent a mobilization sample. I thought not. Fischl admitted he didn't know how close it was to the mobilization sample.

4. Seeley & Fischl suggested changes. Key points are at the transition points between mental groups.

| (1)         | (2)   | (3)                                   | (4)   |
|-------------|---|---------------------------------------|---|
|             | AFQT<br>raw score<br>from<br>operational<br>ASVAB | raw score<br>from<br>Swanson<br>table | suggested<br>raw score points<br>that would probably<br>be acceptable to<br>Army policy maker |
| <u>Side</u> |   |                                       |   |
| 68          | 51  | 55                                    | 59-61   |
| 65          | 45  | 52                                    | 58  |
| 50          | 40  | 44                                    | 42  |
| 31          | 32  | 33                                    | 32  |

Column (4) above lists points that we should examine and consider for a revised table.

5. There seems to be a basic problem. Why does the operational ASVAB 6/7 AFQT table track closely with the AFQT from ACE 73 and not track closely with Navy AFQT scores from BTB 8? No one knows the complete answer to this question. (It may be that the input to the Army in 1975 & 1976 are quite different. It may be due partly to compromise on AFQT parts in ASVAB 6.)

6. I said we would examine the suggested raw score conversion points for Navy data & get back as soon as possible.

*L. Swanson*  
L. Swanson



DEPARTMENT OF THE ARMY  
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR PERSONNEL  
WASHINGTON, D.C. 20310

16 AUG 1976

DAPE-MPE-CS

SUBJECT: Revised Conversion Tables

Commander  
US Army Recruiting Command  
ATTN: USARCRM-M  
Fort Sheridan, IL 60037

1. The USAF in coordination with the other Services Research Laboratories revised the conversion table for determining the AFQT score. The revision was required because an increasing number of mental category I's and II's were entering the Service under ASVAB. The revision was agreed upon by all the Services at the ASVAB working group meeting on 28 and 29 July 1976.
2. The tables have been distributed to each AFEES TCO for use upon receipt. AFQT scores for applicants tested prior to this time will not be changed.
3. A copy of the revised table is attached at Inclosure 1.
4. At Inclosure 2 is information pertaining to actual accessions during the first six months of FY 76 (ACB scores), during the second six months (ASVAB) and projected under the new norms. All information applies to the Army. New norms were based upon a sample of Army applicants tested with the ASVAB.

FOR THE DEPUTY CHIEF OF STAFF FOR PERSONNEL:

2 Incl  
as

*Albert W. Singletary*  
ALBERT W. SINGLETARY  
Colonel, GS  
Chief, Enlisted Division



**ASVAB  
MALE NORMS (All Services)**

| <u>CAT</u> | <u>ACTUAL<br/>ACCESSIONS</u> |                            | <u>NEW NORMS 3/<br/>(Estimate for Army)</u> |
|------------|------------------------------|----------------------------|---|
|            | <u>JUL -<br/>DEC 75 1/</u>   | <u>JAN -<br/>JUN 76 2/</u> |   |
| I&II       | 27.8                         | 30.2                       | 28.6  |
| IIIA       | 24.9                         | 18.7                       | 26.5  |
| IIIB       | 40.0                         | 42.1                       | 34.5  |
| IV         | 7.3                          | 9.0                        | 10.4  |
| I-IIIA     | 52.7                         | 48.9                       | 55.0  |

1/ ACB only

2/ ASVAB scores only

3/ New norms will provide more IIIA and fewer I & II's where the Navy was experiencing problems

**NOTE:** New norms were developed by all the Services to meet their needs. Change in Army norms will more closely resemble the distribution under ACB-73.



MEPCT-R

(12)

DEPARTMENT OF DEFENSE  
HEADQUARTERS UNITED STATES MILITARY ENLISTMENT PROCESSING COMMAND  
FORT SHERIDAN, ILLINOIS 60037

15 SEP 1976

Commander  
Army Research Institute  
ATTN: Dr. Fischl  
Commonwealth Building  
Arlington, VA 22209

Dear Dr. Fischl:

Per your request, we are forwarding tabular information on production mental testing of nonprior service males. Inclosure 1 shows the number of Army and Marine Corps applicants tested, rejected and percent rejected for six consecutive quarters. Similar information for the four services by month during the period January through June 1976 is shown at Inclosure 2.

We are developing data to determine the relationship between the AFEES mental testing rejection rate and training losses of enlistees in the first 179 days of training.

If you have any additional questions, the point of contact is Mr. R. S. Massar, Autovon: 459-2865/2349.

Sincerely yours,

CHARLES W. STENGEL, JR.  
LTC, FA  
Chief, Research/Mgmt Division

2 Incl  
as

# PRODUCTION MENTAL TESTING - JANUARY THROUGH JUNE 1976

## NONPRIOR SERVICE MALES

### NUMBER TESTED BY SERVICE:

| <u>SERVICE</u> | <u>JAN</u> | <u>FEB</u> | <u>MAR</u> | <u>APR</u> | <u>MAY</u> | <u>JUN</u> | <u>TOTAL</u> |
|----------------|------------|------------|------------|------------|------------|------------|--------------|
| ARMY           | 36 642     | 35 332     | 37 079     | 27 364     | 26 961     | 31 460     | 194 838      |
| NAVY           | 14 905     | 15 484     | 16 542     | 12 688     | 11 896     | 14 021     | 85 536       |
| USAF           | 12 752     | 12 322     | 12 791     | 9 673      | 9 156      | 10 493     | 67 187       |
| USMC           | 8 425      | 8 282      | 9 300      | 6 866      | 6 137      | 6 235      | 45 245       |
| TOTAL          | 72 724     | 71 420     | 75 712     | 56 591     | 54 150     | 62 209     | 392 806      |

### NUMBER REJECTED BY SERVICE:

|       |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|
| ARMY  | 8 323  | 8 405  | 8 970  | 7 264  | 7 411  | 8 939  | 49 312 |
| NAVY  | 1 722  | 1 809  | 1 962  | 1 526  | 1 548  | 1 764  | 10 331 |
| USAF  | 2 762  | 2 606  | 2 888  | 2 253  | 2 247  | 2 718  | 15 474 |
| USMC  | 1 701  | 1 680  | 1 951  | 1 592  | 1 482  | 1 444  | 9 850  |
| TOTAL | 14 508 | 14 500 | 15 771 | 12 635 | 12 688 | 14 865 | 84 967 |

### PERCENT REJECTED BY SERVICE:

|       |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|
| ARMY  | 22.7 | 23.8 | 24.2 | 26.5 | 27.5 | 23.4 | 25.3 |
| NAVY  | 11.6 | 11.7 | 11.9 | 12.0 | 13.0 | 12.6 | 12.1 |
| USAF  | 21.7 | 21.1 | 22.6 | 23.3 | 24.5 | 25.9 | 23.0 |
| USMC  | 20.2 | 20.3 | 21.0 | 23.2 | 24.1 | 23.2 | 21.8 |
| TOTAL | 19.9 | 20.3 | 20.8 | 22.3 | 23.4 | 23.9 | 21.6 |

SOURCE: AFEEs Operational Workload Report (OPS-9)

Prepared by MEPCT  
28 Jul 1976

# PRODUCTION MENTAL TESTING - JANUARY 1975 THROUGH JUNE 1976

## NONPRIOR SERVICE MALES

### NUMBER TESTED BY SERVICE:

|       | <u>FISCAL YEAR 1975</u> |                | <u>FISCAL YEAR 1976</u> |                |                |                |
|-------|-------------------------|----------------|-------------------------|----------------|----------------|----------------|
|       | <u>3rd Qtr</u>          | <u>4th Qtr</u> | <u>1st Qtr</u>          | <u>2nd Qtr</u> | <u>3rd Qtr</u> | <u>4th Qtr</u> |
| ARMY  | 137 973                 | 122 021        | 111 316                 | 161 490        | 109 053        | 85 785         |
| USMC  | 36 062                  | 29 718         | 28 784                  | 35 259         | 26 007         | 19 238         |
| TOTAL | 174 035                 | 151 739        | 140 100                 | 196 749        | 135 060        | 105 023        |

### NUMBER REJECTED BY SERVICE:

|       |        |          |        |        |        |        |
|-------|--------|----------|--------|--------|--------|--------|
| ARMY  | 15 707 | (9 225)  | 13 226 | 22 979 | 25 698 | 23 614 |
| USMC  | 4 991  | (3 076)  | 4 429  | 3 886  | 5 332  | 4 518  |
| TOTAL | 20 698 | (12 301) | 17 655 | 26 865 | 31 030 | 28 132 |

### PERCENT REJECTED BY SERVICE:

|       |                                    |                  |                                    |                                    |                                      |                                      |
|-------|------------------------------------|------------------|------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|
| ARMY  | <del>11.4</del> <i>ACB-73 11.4</i> | <del>(7.6)</del> | <del>11.9</del> <i>ACB-73 11.9</i> | <del>14.2</del> <i>ACB-73 14.2</i> | <del>23.6</del> <i>ASVAB-67 23.6</i> | <del>27.5</del> <i>ASVAB-67 27.5</i> |
| USMC  | 13.8                               | (10.4)           | 15.4 <i>ASVAB-3</i>                | 11.0 <i>ASVAB-3</i>                | 20.5                                 | 23.5                                 |
| TOTAL | 11.9                               | ( 8.1)           | 12.6                               | 13.7                               | 23.0                                 | 26.8                                 |

*5 file  
high like*

*Jan 76*

SOURCE: AFEEs Operational Workload Report (OPS-9)

Prepared by MEPCT  
28 Jul 1976



PERI-IL

12 February 1976

MEMORANDUM FOR: MR. RUBERTON, DAPE-MPE-CS

SUBJECT: Implementation of ASVAB Forms 5,6,7

1. This memorandum expresses my concerns about the possible impacts of ASVAB implementation on defense accessioning operations. The Forms 5,6,7 were developed under very rigorous time deadlines. Due to the longitudinal nature of this kind of development program and the necessary sizes of the populations involved, considerably longer time frames are ordinarily involved.

2. Areas of concern follow.

a. Difficulty of the tests. Several researchers from the Services have raised questions about the difficulty levels. Tests that are too hard may keep out of military service men and women who would have qualified on previous selection batteries and served productively. Conversely, tests that are too easy may do a less than adequate job of screening out potentially poor performers. Both concerns have been expressed in connection with these ASVAB forms.

b. Machine Scoring. The operational method for machine scoring now in effect requires multiple handling of each answer sheet. Methods are available to reduce handling to only one scoring pass for all scores, but these require printing questions in a different sequence and modifying the answer sheet accordingly.

c. Printing errors on answer sheets. Some indeterminate number of answer sheets have answer spaces printed a fraction of an inch out of registration. This will be enough to invalidate a machine score on such sheets and necessitate hand scoring (if known).

d. Hand scoring keys. Accuracy of hand scoring keys has been questioned by field personnel. Two obvious such errors were corrected at DA, and instructions were provided to USAREC. Accordingly, there may be additional problems in this area.

PERI-IL

SUBJECT: Implementation of ASVAB Forms 5, 6, 7

e. Digitak scoring machine control form K. Reports have been received from Digitak-equipped AFES that some K forms are not usable.

f. Conversion tables. Another problem is very disconcerting to the field. Conversions from raw to standard scores are not smooth. Specific problems exist wherein a change of one raw score point makes a one standard score point change in some cases; while in others a zero change, and in still others, a 3-point standard score change. Of special concern is the lack of standard scores at the boundaries of categories. While there is no necessary technical deficiency, the jagged appearance is very confusing for interpretation and undermines user confidence.

g. Testing time in high schools. The Army has a special costly problem: supplementary testing is required at the AFES or MET site because one important classification sub-test, the Classification Inventory, was deleted from the high school form (Form 5) due to time constraints. Army cannot be satisfied with the omission of this sub-test and the consequent impact on recruiting and AFES applicant processing. Other means of reducing testing time for the schools have been suggested but not acted upon, which possibly could provide the needed time.

3. In view of these observed problems, I believe an operational evaluation is needed to determine if the basic requirement for a high-quality inter-service qualification and classification test battery has been satisfactorily achieved. Further, the Army Classification Battery 1973 required about 10 years of research, and similar effort has been required in the Navy and Air Force classification battery development. Accordingly, the ASVAB program should be required to equal or exceed the attained efficiencies of these, and should be evaluated to obtain such a determination.

SIGNED:

RALPH R. CANTER, Ph.D.  
Chief, Personnel Accession &  
Utilization Technical Area

CP:  
Acting Director,  
Accession & Retention Policy,  
ODASD (MFP), OASD (M&RA)

FINAL

PERI-P

**DEPARTMENT OF THE ARMY**  
**U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES**  
**1200 WILSON BOULEVARD**  
**ARLINGTON, VIRGINIA 22209**

18 July 1975

MEMORANDUM THRU: DIRECTOR, MILITARY PERSONNEL MANAGEMENT

FOR: DEPUTY ASSISTANT SECRETARY FOR DEFENSE (M&amp;RA)

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Forms  
 5, 6, and 7

1. It has come to my attention that the new forms of the ASVAB (Forms 5, 6, and 7) as developed at the Air Force Human Resources Laboratory contain tests which are extremely difficult. Although tests of extreme difficulty may be necessary and satisfactory for Air Force purposes of differentially screening of high aptitude individuals, the use of the same tests for selection and classification in the Army (and probably in the Marine Corps) would be inappropriate and lead to considerable difficulty, both for the Service and for the individuals being tested. Tests in which large numbers of examinees are able to answer only 3 or 4 questions do not provide an adequate response range for determination of differential abilities. The result would be to disqualify individuals who currently are performing satisfactorily on the job within the Army. Additionally, applicants would be subjected to extreme frustration on the AFES tests, which would undoubtedly undermine recruiting activities, and could quite conceivably bring about the demise of the high school testing program.

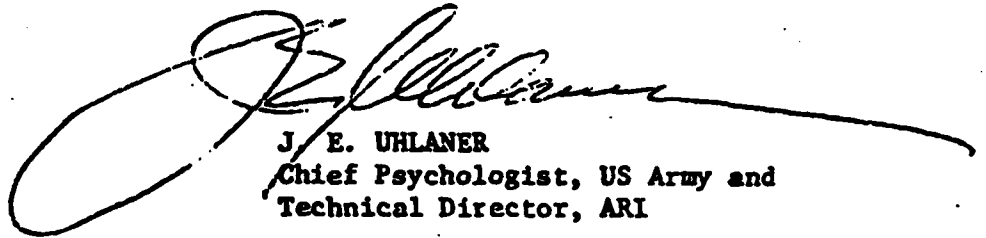
2. From a psychometrics, or test construction, point of view, the problem of the trade-offs concerned is fairly complicated and cannot be answered ad hoc. Air Force, and to some extent Navy, are attempting to select out individuals of relatively high abilities, allowing a minimum number of lower ability individuals to slip through. Army and the Marine Corps try to utilize individuals with lower levels of general and specific aptitudes. To accommodate both of these sets of requirements within a single test battery requires, among other things, different cutting scores, with different sensitivities allowable at each level. The additional constraint of the three hour maximal time limit severely constrains and complicates the problem. In essence, although it is imperative that the test have high validity and reliability for all intended uses, it is extremely difficult to insure this. While difficult, it is not impossible. Scientists of the Army Research Institute have been able to develop and provide some replacement questions which would reduce the difficulty level of the battery's tests. A group of such replacement questions was provided to the Air Force Human Resources Laboratory on 9 July and another such group is being transmitted at this time.

PERI-P

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Forms  
5, 6, and 7

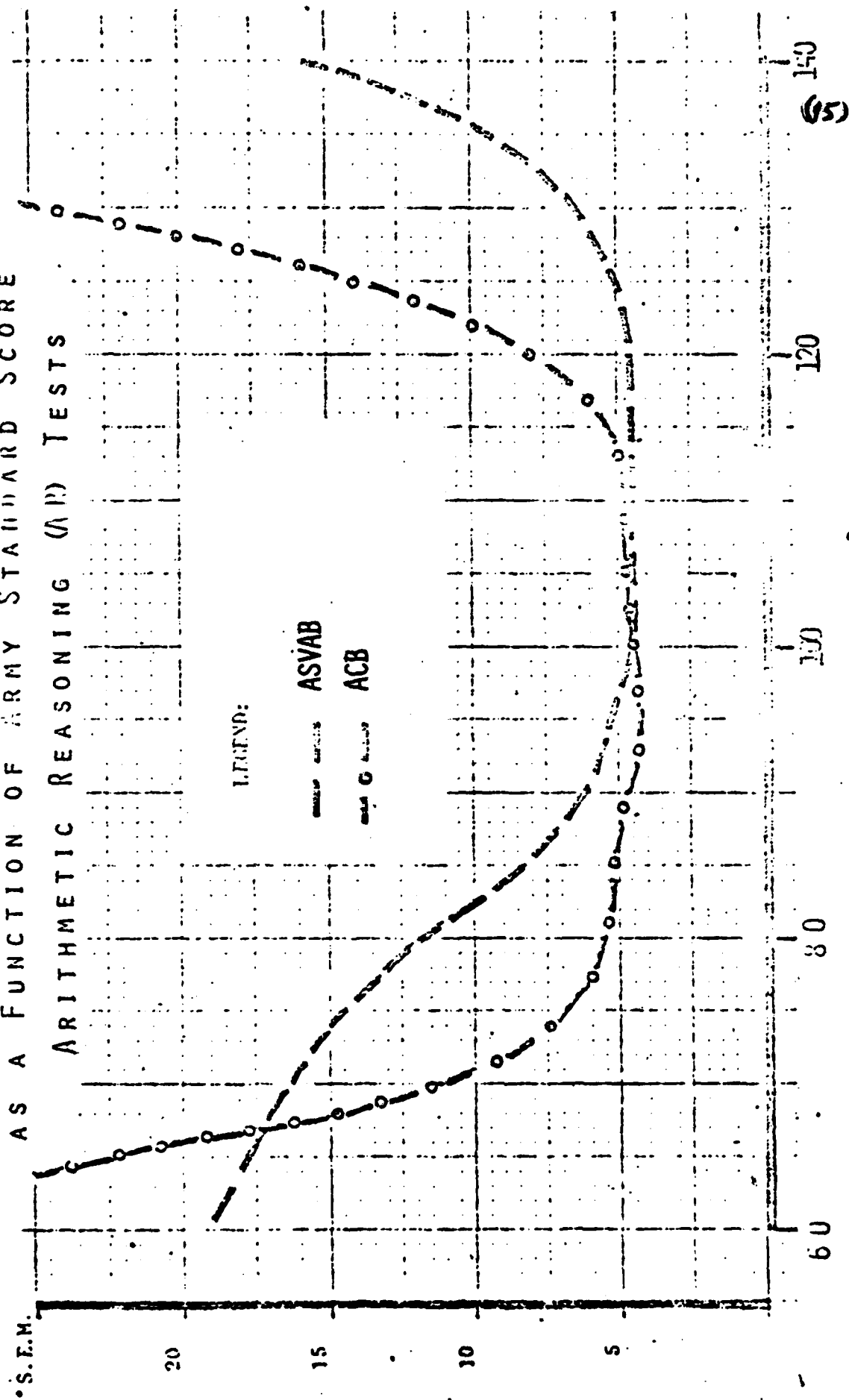
3. It is important that it be known at your level that the resulting test battery will still be a difficult one. In fact, it will be considerably more difficult than the current ASVAB, for example. However, with the modifications that the ARI scientists have provided, I believe that the battery has a much better chance of working for the Army. Of course, the ultimate appraisal must await empirical validation. Once these results are available, we will be able to assess whether the battery can be utilized for Army needs or whether it is necessary to go with an Army specific test to obtain the information Army requires.

4. I am pleased that Army scientists have been able to respond to this important Defense need in so timely a manner and trust that the final input to you will be equally timely.



J. E. UHLANER  
Chief Psychologist, US Army and  
Technical Director, ARI

# STANDARD ERROR OF MEASUREMENT (S.E.M.) AS A FUNCTION OF ARMY STANDARD SCORE ARITHMETIC REASONING (AR) TESTS



MPI-28:000  
1230  
1 NOV 1976

From: Commandant of the Marine Corps  
To: Deputy Chief of Staff for Personnel (DAPE-MPE-SS),  
Department of the Army, Washington, D. C. 20310

Subj: ASVAE Composites and Conversion Tables

Ref: (a) ASVAB Working Group Meeting of 29 July 1976 at  
Lackland AFB, Texas

Encl: (1) Revised Marine Corps Composite Formulas  
(2) Conversion Table for CO  
(3) Conversion Table for FA  
(4) Conversion Table for EL  
(5) Conversion Table for OF  
(6) Conversion Table for SC  
(7) Conversion Table for MN  
(8) Conversion Table for GM  
(9) Conversion Table for CL  
(10) Conversion Table for ST  
(11) Conversion Table for UT

1. During reference (a), it was reported that the Armed Services Vocational Aptitude Battery (ASVAB) norms required recalibration. At that meeting, the Armed Forces Qualification Test (AFQT) type norms were revised for all services use. The Marine Corps representative stated that analysis and revision of the ten aptitude area composite conversion tables used by the Marine Corps would be forthcoming.

2. Enclosure (1) contains the revised conversion formulas for use by the Marine Corps. Enclosures (2) through (11) are the revised conversion tables for the ten composites utilized by the Marine Corps. It is requested that these conversion tables be implemented at the Armed Forces Examining and Entrance Stations (AFEES) for the computation of Marine Corps composite scores.

3. It is also requested that the General Science/Biological (GSB) subtest be replaced by the full General Science (GS) test in all composites currently utilizing GSB.

R. C. SCHULZE

Brigadier General, U.S. Marine Corps  
Director, Manpower Plans and Policy Division  
in the direction of the Commandant of the Marine Corps

REVISED AIRLINE COMPS COMPOSITE FORMING

DO = AR + SI + SP + AS + CC

PA = AR + GI + AI + ET + CI

EL = AR + GR + AI + SI

OF = GI + AI + CI

SC = AR + GR + AI + SP

HM = AR + GI + AI + CI + CI

CS = AR + AI + AI + AI

CE = AR + AI + AI + CI

ET = AR + AI + AI

CI = AR + AI

Enclosure (1)

# CONVERSION TABLE FOR ASVAB 6/7 COMBAT APTITUDE AREA (CO)

| <u>Raw<br/>score</u> | <u>Standard<br/>score</u> | <u>Raw<br/>score</u> | <u>Standard<br/>score</u> | <u>Raw<br/>score</u> | <u>Standard<br/>score</u> | <u>Raw<br/>score</u> | <u>Standard<br/>score</u> |
|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| 101-110              | 147                       |                      |                           |                      |                           |                      |                           |
| 100                  | 142                       | 75                   | 108                       | 50                   | 68                        |                      |                           |
| 99                   | 142                       | 74                   | 106                       | 49                   | 65                        |                      |                           |
| 98                   | 142                       | 73                   | 105                       | 48                   | 63                        |                      |                           |
| 97                   | 139                       | 72                   | 104                       | 47                   | 62                        |                      |                           |
| 96                   | 139                       | 71                   | 102                       | 46                   | 60                        |                      |                           |
| 95                   | 137                       | 70                   | 100                       | 45                   | 59                        |                      |                           |
| 94                   | 134                       | 69                   | 99                        | 44                   | 56                        |                      |                           |
| 93                   | 131                       | 68                   | 98                        | 43                   | 56                        |                      |                           |
| 92                   | 130                       | 67                   | 97                        | 42                   | 53                        |                      |                           |
| 91                   | 130                       | 66                   | 96                        | 41                   | 53                        |                      |                           |
| 90                   | 128                       | 65                   | 95                        | 40                   | 53                        |                      |                           |
| 89                   | 126                       | 64                   | 93                        | 39                   | 53                        |                      |                           |
| 88                   | 125                       | 63                   | 92                        | 38                   | 53                        |                      |                           |
| 87                   | 123                       | 62                   | 91                        | 37                   | 53                        |                      |                           |
| 86                   | 122                       | 61                   | 90                        | 36                   | 53                        |                      |                           |
| 85                   | 120                       | 60                   | 86                        | 35                   | 53                        |                      |                           |
| 84                   | 119                       | 59                   | 85                        | 34                   | 53                        |                      |                           |
| 83                   | 118                       | 58                   | 83                        | 33                   | 53                        |                      |                           |
| 82                   | 117                       | 57                   | 82                        | 32                   | 53                        |                      |                           |
| 81                   | 116                       | 56                   | 80                        | 0-31                 | 53                        |                      |                           |
| 80                   | 115                       | 55                   | 78                        |                      |                           |                      |                           |
| 79                   | 113                       | 54                   | 76                        |                      |                           |                      |                           |
| 78                   | 112                       | 53                   | 75                        |                      |                           |                      |                           |
| 77                   | 111                       | 52                   | 73                        |                      |                           |                      |                           |
| 76                   | 110                       | 51                   | 70                        |                      |                           |                      |                           |



CONVERSION TABLE FOR ASVAB 6/7 FIELD AND ARTILLERY APTITUDE AREA (FA)

| Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score |
|--------------|-------------------|--------------|-------------------|--------------|-------------------|
| 105-95       | 147               | 70           | 113               | 45           | 83                |
| 94           | 147               | 69           | 112               | 44           | 82                |
| 93           | 147               | 68           | 112               | 43           | 80                |
| 92           | 142               | 67           | 111               | 42           | 79                |
| 91           | 139               | 66           | 110               | 41           | 78                |
| 90           | 139               | 65           | 109               | 40           | 76                |
| 89           | 137               | 64           | 108               | 39           | 73                |
| 88           | 137               | 63           | 106               | 38           | 71                |
| 87           | 134               | 62           | 105               | 37           | 68                |
| 86           | 131               | 61           | 104               | 36           | 66                |
| 85           | 130               | 60           | 103               | 35           | 65                |
| 84           | 128               | 59           | 102               | 34           | 62                |
| 83           | 127               | 58           | 100               | 33           | 60                |
| 82           | 126               | 57           | 100               | 32           | 59                |
| 81           | 125               | 56           | 99                | 31           | 56                |
| 80           | 123               | 55           | 98                | 30           | 56                |
| 79           | 122               | 54           | 96                | 29           | 53                |
| 78           | 121               | 53           | 95                | 28           | 53                |
| 77           | 120               | 52           | 94                | 27           | 53                |
| 76           | 120               | 51           | 93                | 26           | 53                |
| 75           | 118               | 50           | 92                | 25           | 53                |
| 74           | 117               | 49           | 90                | 24           | 53                |
| 73           | 116               | 48           | 88                | 23           | 53                |
| 72           | 115               | 47           | 86                | 22           | 53                |
| 71           | 115               | 46           | 85                | 0-21         | 53                |

Enclosure (3)

CONVERSION TABLE FOR ASVAB 6/7 ELECTRONICS APTITUDE AREA (EL)\*

| Raw score | Standard score | Raw score | F | Standard score | Raw score | Standard score |
|-----------|----------------|-----------|---|----------------|-----------|----------------|
| 90        | 147            | 65        |   | 116            | 40        | 91             |
| 89        | 147            | 64        |   | 116            | 39        | 90             |
| 88        | 147            | 63        |   | 115            | 38        | 86             |
| 87        | 147            | 62        |   | 114            | 37        | 85             |
| 86        | 142            | 61        |   | 113            | 36        | 83             |
| 85        | 142            | 60        |   | 112            | 35        | 81             |
| 84        | 142            | 59        |   | 111            | 34        | 80             |
| 83        | 139            | 58        |   | 111            | 33        | 78             |
| 82        | 137            | 57        |   | 110            | 32        | 76             |
| 81        | 137            | 56        |   | 109            | 31        | 75             |
| 80        | 134            | 55        |   | 107            | 30        | 71             |
| 79        | 131            | 54        |   | 106            | 29        | 70             |
| 78        | 130            | 53        |   | 105            | 28        | 66             |
| 77        | 130            | 52        |   | 104            | 27        | 65             |
| 76        | 128            | 51        |   | 103            | 26        | 63             |
| 75        | 126            | 50        |   | 102            | 25        | 60             |
| 74        | 125            | 49        |   | 100            | 24        | 59             |
| 73        | 124            | 48        |   | 99             | 23        | 55             |
| 72        | 123            | 47        |   | 98             | 22        | 53             |
| 71        | 122            | 46        |   | 97             | 21        | 53             |
| 70        | 121            | 45        |   | 96             | 20        | 53             |
| 69        | 120            | 44        |   | 95             | 19        | 53             |
| 68        | 119            | 43        |   | 94             | 18        | 53             |
| 67        | 117            | 42        |   | 93             | 17        | 53             |
| 66        | 117            | 41        |   | 92             | 16        | 53             |

\*EL = AR + GS + MK + EI

Enclosure (4)

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CONVERSION TABLE FOR ASVAB 6/7  
OPERATORS AND FOOD HANDLERS APTITUDE AREA (OF)

| Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score |
|--------------|-------------------|--------------|-------------------|--------------|-------------------|
| 0-55         | 147               | 55           | 115               | 20           | 71                |
| 59           | 147               | 34           | 111               | 19           | 66                |
| 68           | 147               | 33           | 110               | 18           | 65                |
| 67           | 147               | 32           | 106               | 17           | 62                |
| 66           | 142               | 31           | 105               | 16           | 59                |
| 45           | 139               | 30           | 100               | 15           | 56                |
| 44           | 137               | 29           | 99                | 14           | 53                |
| 43           | 134               | 28           | 96                | 13           | 53                |
| 42           | 130               | 27           | 95                | 12           | 53                |
| 41           | 128               | 26           | 91                | 11           | 53                |
| 40           | 125               | 25           | 90                | 0-10         | 53                |
| 39           | 123               | 24           | 85                |              |                   |
| 38           | 120               | 23           | 80                |              |                   |
| 37           | 118               | 22           | 79                |              |                   |
| 36           | 116               | 21           | 76                |              |                   |

Enclosure (5)

CONVERSION TABLE FOR ASVAB 6/7  
GENERAL MAINTENANCE APTITUDE AREA (GM)\*

| Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score |
|--------------|-------------------|--------------|-------------------|--------------|-------------------|
| 80           | 147               | 55           | 115               | 30           | 81                |
| 79           | 147               | 54           | 113               | 29           | 80                |
| 78           | 147               | 53           | 112               | 28           | 78                |
| 77           | 147               | 52           | 111               | 27           | 75                |
| 76           | 147               | 51           | 110               | 26           | 73                |
| 75           | 142               | 50           | 109               | 25           | 68                |
| 74           | 142               | 49           | 108               | 24           | 66                |
| 73           | 139               | 48           | 106               | 23           | 65                |
| 72           | 137               | 47           | 105               | 22           | 62                |
| 71           | 137               | 46           | 104               | 21           | 60                |
| 70           | 131               | 45           | 103               | 20           | 59                |
| 69           | 130               | 44           | 102               | 19           | 56                |
| 68           | 130               | 43           | 100               | 18           | 53                |
| 67           | 128               | 42           | 99                | 17           | 53                |
| 66           | 126               | 41           | 98                | 16           | 53                |
| 65           | 125               | 40           | 97                | 15           | 53                |
| 64           | 124               | 39           | 95                | 14           | 53                |
| 63           | 122               | 38           | 94                | 13           | 53                |
| 62           | 122               | 37           | 93                | 12           | 53                |
| 61           | 120               | 36           | 92                | 0-11         | 53                |
| 60           | 120               | 35           | 91                |              |                   |
| 59           | 118               | 34           | 90                |              |                   |
| 58           | 117               | 33           | 86                |              |                   |
| 57           | 116               | 32           | 85                |              |                   |
| 56           | 115               | 31           | 83                |              |                   |

\*GM = AR + MC + AI + GS

Inclosure (6)

CONVERSION TABLE FOR ASVAB 6/7 MECHANICAL MAINTENANCE APTITUDE AREA (MM)

| Raw score | Standard score | Raw score | Standard score | Raw score | Standard score |
|-----------|----------------|-----------|----------------|-----------|----------------|
| 105-110   | 147            | 75        | 112            | 45        | 77             |
| 104       | 147            | 74        | 111            | 44        | 75             |
| 103       | 147            | 73        | 110            | 43        | 73             |
| 102       | 142            | 72        | 109            | 42        | 71             |
| 101       | 142            | 71        | 108            | 41        | 70             |
| 100       | 142            | 70        | 106            | 40        | 68             |
| 99        | 139            | 69        | 105            | 39        | 66             |
| 98        | 137            | 68        | 105            | 38        | 65             |
| 97        | 137            | 67        | 104            | 37        | 63             |
| 96        | 134            | 66        | 103            | 36        | 62             |
| 95        | 131            | 65        | 101            | 35        | 60             |
| 94        | 130            | 64        | 100            | 34        | 59             |
| 93        | 130            | 63        | 99             | 33        | 56             |
| 92        | 128            | 62        | 98             | 32        | 53             |
| 91        | 127            | 61        | 97             | 31        | 53             |
| 90        | 126            | 60        | 96             | 30        | 53             |
| 89        | 125            | 59        | 96             | 29        | 53             |
| 88        | 124            | 58        | 95             | 28        | 53             |
| 87        | 123            | 57        | 94             | 27        | 53             |
| 86        | 122            | 56        | 92             | 26        | 53             |
| 85        | 121            | 55        | 92             | 0-25      | 53             |
| 84        | 120            | 54        | 91             |           |                |
| 83        | 119            | 53        | 90             |           |                |
| 82        | 118            | 52        | 87             |           |                |
| 81        | 117            | 51        | 85             |           |                |
| 80        | 116            | 50        | 84             |           |                |
| 79        | 115            | 49        | 85             |           |                |
| 78        | 115            | 48        | 82             |           |                |
| 77        | 113            | 47        | 80             |           |                |
| 76        | 112            | 46        | 79             |           |                |

Enclosure (7)

CONVERSION TABLE FOR ASVAB 6/7 CLERICAL APTITUDE AREA (CL)

| Raw score | Standard score | Raw score | Standard score | Raw score | Standard score | Raw score | Standard score |
|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|
| 90-100    | 147            | 65        | 116            | 40        | 78             |           |                |
| 89        | 147            | 64        | 115            | 39        | 77             |           |                |
| 88        | 147            | 63        | 113            | 38        | 75             |           |                |
| 87        | 147            | 62        | 112            | 37        | 73             |           |                |
| 86        | 147            | 61        | 111            | 36        | 70             |           |                |
|           |                |           |                |           |                |           |                |
| 85        | 142            | 60        | 110            | 35        | 66             |           |                |
| 84        | 142            | 59        | 108            | 34        | 65             |           |                |
| 83        | 142            | 58        | 106            | 33        | 62             |           |                |
| 82        | 142            | 57        | 105            | 32        | 60             |           |                |
| 81        | 139            | 56        | 104            | 31        | 59             |           |                |
|           |                |           |                |           |                |           |                |
| 80        | 139            | 55        | 103            | 30        | 56             |           |                |
| 79        | 137            | 54        | 101            | 29        | 56             |           |                |
| 78        | 137            | 53        | 100            | 28        | 53             |           |                |
| 77        | 134            | 52        | 98             | 27        | 53             |           |                |
| 76        | 131            | 51        | 97             | 26        | 53             |           |                |
|           |                |           |                |           |                |           |                |
| 75        | 130            | 50        | 96             | 25        | 53             |           |                |
| 74        | 128            | 49        | 95             | 24        | 53             |           |                |
| 73        | 127            | 48        | 93             | 23        | 53             |           |                |
| 72        | 125            | 47        | 92             | 22        | 53             |           |                |
| 71        | 123            | 46        | 90             | 21        | 53             |           |                |
|           |                |           |                |           |                |           |                |
| 70        | 122            | 45        | 87             |           |                |           |                |
| 69        | 121            | 44        | 85             |           |                |           |                |
| 68        | 120            | 43        | 83             |           |                |           |                |
| 67        | 118            | 42        | 82             |           |                |           |                |
| 66        | 117            | 41        | 80             |           |                |           |                |

CONVERSION TABLE FOR ASVAB 6/7 SKILLED TECHNICAL APTITUDE AREA (ST)\*

| Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score | Raw<br>score | Standard<br>score |
|--------------|-------------------|--------------|-------------------|--------------|-------------------|
| 60           | 147               | 40           | 113               | 20           | 80                |
| 59           | 147               | 39           | 112               | 19           | 76                |
| 58           | 142               | 38           | 111               | 18           | 71                |
| 57           | 142               | 37           | 110               | 17           | 68                |
| 56           | 139               | 36           | 108               | 16           | 65                |
| 55           | 137               | 35           | 106               | 15           | 60                |
| 54           | 131               | 34           | 105               | 14           | 59                |
| 53           | 130               | 33           | 104               | 13           | 56                |
| 52           | 127               | 32           | 103               | 12           | 53                |
| 51           | 125               | 31           | 100               | 11           | 53                |
| 50           | 124               | 30           | 99                | 0-10         | 53                |
| 49           | 122               | 29           | 98                |              |                   |
| 48           | 122               | 28           | 96                |              |                   |
| 47           | 121               | 27           | 95                |              |                   |
| 46           | 120               | 26           | 93                |              |                   |
| 45           | 117               | 25           | 92                |              |                   |
| 44           | 117               | 24           | 90                |              |                   |
| 43           | 116               | 23           | 85                |              |                   |
| 42           | 115               | 22           | 83                |              |                   |
| 41           | 113               | 21           | 81                |              |                   |

\*ST = AR + MK + GS

Enclosure (9)

CONVERSION TABLE FOR ASVAB 6/7 GENERAL TECHNICAL APTITUDE AREA (GT)

| Raw<br>score | Percentile<br>score | Standard<br>score | Raw<br>score | Percentile<br>score | Standard<br>score | Raw<br>score | Percentile<br>score | Standard<br>score |
|--------------|---------------------|-------------------|--------------|---------------------|-------------------|--------------|---------------------|-------------------|
| 50           | 99+                 | 147               | 35           | 65                  | 110               | 20           | 23                  | 82                |
| 49           | 99                  | 142               | 34           | 61                  | 107               | 19           | 21                  | 80                |
| 48           | 96                  | 134               | 33           | 59                  | 106               | 18           | 18                  | 77                |
| 47           | 94                  | 130               | 32           | 57                  | 105               | 17           | 16                  | 75                |
| 46           | 92                  | 128               | 31           | 53                  | 103               | 16           | 13                  | 70                |
| 45           | 89                  | 125               | 30           | 50                  | 100               | 15           | 10                  | 65                |
| 44           | 87                  | 123               | 29           | 47                  | 99                | 14           | 9                   | 63                |
| 43           | 85                  | 122               | 28           | 45                  | 98                | 13           | 7                   | 60                |
| 42           | 82                  | 120               | 27           | 42                  | 96                | 12           | 5                   | 59                |
| 41           | 79                  | 117               | 26           | 39                  | 95                | 11           | 3                   | 53                |
| 40           | 77                  | 116               | 25           | 36                  | 93                | 10           | 3                   | 53                |
| 39           | 74                  | 115               | 24           | 34                  | 92                | 9            | 2                   | 53                |
| 38           | 72                  | 113               | 23           | 31                  | 90                | 0-8          | 1                   | 53                |
| 37           | 70                  | 112               | 22           | 29                  | 87                |              |                     |                   |
| 36           | 67                  | 111               | 21           | 27                  | 85                |              |                     |                   |



CONVERSION TABLE FOR ASVAB 6/7  
SURVEILLANCE AND COMMUNICATIONS APTITUDE AREA (SC)

| <u>Raw<br/>score</u> | <u>Standard<br/>score</u> | <u>Raw<br/>score</u> | <u>Standard<br/>score</u> | <u>Raw<br/>score</u> | <u>Standard<br/>score</u> |
|----------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------------|
| 90                   | 147                       | 65                   | 113                       | 40                   | 85                        |
| 89                   | 147                       | 64                   | 112                       | 39                   | 83                        |
| 88                   | 147                       | 63                   | 111                       | 38                   | 82                        |
| 87                   | 147                       | 62                   | 111                       | 37                   | 80                        |
| 86                   | 142                       | 61                   | 110                       | 36                   | 78                        |
| 85                   | 139                       | 60                   | 109                       | 35                   | 76                        |
| 84                   | 139                       | 59                   | 107                       | 34                   | 75                        |
| 83                   | 137                       | 58                   | 106                       | 33                   | 71                        |
| 82                   | 131                       | 57                   | 105                       | 32                   | 68                        |
| 81                   | 130                       | 56                   | 104                       | 31                   | 66                        |
| 80                   | 130                       | 55                   | 103                       | 30                   | 65                        |
| 79                   | 128                       | 54                   | 102                       | 29                   | 63                        |
| 78                   | 127                       | 53                   | 100                       | 28                   | 60                        |
| 77                   | 126                       | 52                   | 99                        | 27                   | 59                        |
| 76                   | 125                       | 51                   | 98                        | 26                   | 56                        |
| 75                   | 123                       | 50                   | 97                        | 25                   | 53                        |
| 74                   | 122                       | 49                   | 96                        | 24                   | 53                        |
| 73                   | 121                       | 48                   | 96                        | 23                   | 53                        |
| 72                   | 120                       | 47                   | 95                        | 22                   | 53                        |
| 71                   | 119                       | 46                   | 94                        | 21                   | 53                        |
| 70                   | 117                       | 45                   | 92                        | 0-20                 | 53                        |
| 69                   | 117                       | 44                   | 91                        |                      |                           |
| 68                   | 116                       | 43                   | 91                        |                      |                           |
| 67                   | 115                       | 42                   | 90                        |                      |                           |
| 66                   | 115                       | 41                   | 86                        |                      |                           |

Enclosure (11)

PERI-IL

24 February 1977

## MEMORANDUM FOR RECORD

SUBJECT: Report on ASVAB Working Group Meeting

1. Purpose: Regular bi-monthly meeting of ASVAB Work Group.
2. Date and Place: 26-28 January 1977; Waukegan, Illinois.
3. Summary: This was a very comprehensive meeting. Agenda appears at Inclosure 1, with most significant items being Numbers 5, 9, and 10. These concern attempts to deal with an alleged test compromise problem, ARI actions required in review of materials for new test battery forms, and a funding matter requiring attention of the ARI Technical Director.
4. Participants: Research and policy representatives of each service. Army was represented by undersigned and Mr. Ruberton, ODCSPER. Full list of attendees will follow with minutes of meeting.
5. Discussion: Agenda is at Inclosure 1.

Each service reported on the status of their validation research. All are more-or-less targeted for completion at the end of this calendar year.

MEPCOM, by letter of 22 Dec 76 (Inclosure 2), expressed strong need for administration of the high school version (Form 5) to be reduced to 2 1/2 hours. Originally designed to be a true alternate form of the AFMHS versions (Forms 6 and 7), the Army's Classification Inventory was deleted earlier in order to fit the battery into a three-hour time period. Services were now asked to consider further ways to reduce the time. None of the suggestions in paragraph 4 of Inclosure 2 were accepted by the group. It was agreed that the only changes which could be considered would be administrative in nature, that tests or items could not be deleted without invalidating current norms and/or committing reprinting of test booklets. MEPCOM was asked to study administrative ways of shortening the sessions (such as having identification and demographic information on answer cards completed in advance or after the testing session, split testing sessions, others) and to report to the group at the next meeting.

PLRI-IL

SUBJECT: Report on ASVAB Working Group Meeting

Questions arose of cost-effectiveness of the high school testing program. All acknowledge that accurate accounting is not possible, that figures are invariably underestimated, but Army and Air Force report a known 10% of each of their enlistments had been tested in high school.

An uncoordinated set of norm tables for Form 5 had apparently been prepared and distributed by USPCOH. It had also been rescinded prior to this meeting. The topic of norm tables prompted USMC to make a strong prepared presentation indicating need for a re-norming of all forms of the battery. I supported this as a laboratory position. This discussion also unearthed that the Navy, despite a prior adjustment of the AFQT norms to which we all agreed, is still seemingly enlisting 8-9% mental category I's instead of the 3% which they believe is what the figure should be.

A proposed study guide/information pamphlet for applicant use, developed by ARI, was distributed to each Working Group member for comment. The document presents descriptive information, 3-5 sample items from each of the 13 subtests, a specimen answer sheet for use with the items, and a scoring key for those items. USMC expressed the view that more items are needed, about 15 of each, and Navy expressed the view that the package was deficient as an instructional tool although could not provide detail on this. Recruiting personnel of joint services will meet to review the submission and report their views at the next meeting.

AFHRL has prepared four alternate forms of the AFQT portion of the battery, as a means for dealing with what was described as a sizeable test compromise problem. Three of these are acceptable AFQT's; the fourth is not even that, it is much too difficult. Most serious, though, is that the raw part scores from these AFQTs, which are needed as input to the Army aptitude area composites, do not correlate high enough with their analogs in ASVAB-6/7 to use them as substitutes. The range of  $r$ 's for these proposed alternates is from 0.57 to 0.84 (oddly, the 0.84 is for one of the parts of the problem AFQT), with the median being in the high 0.70's. These additional forms were prepared in attempts at dealing with a presumed high incidence of test security violation. Since inadequate alternate forms predisposes some degree of mismeasurement of everyone to whom they are administered, the matter of how prevalent the test compromise is becomes an issue (i.e., it is possible that fewer applicants could be mismeasured by living with the compromise a little while until good solutions are developed). When pressed for an estimate, none except Army had any hard data; Lou Ruberton reported ODCSPER estimate of some 3-5%. With so small a percentage, other stop-gaps (rather than inadequate alternate forms) become attractive. ARI had developed a highly cost-effective compromise detection procedure which would flag most cases, at a cost of only a 10-minute recant of only 15%-20% of the applicants. This had been submitted to ODCSPER on 5 October 1976, and I presented it to the Working

PERI-IL

SUBJECT: Report on ASVAB Working Group Meeting

Group as a stop-gap instead of the alternate forms. USMC proposed administration of a secure AFQT prior to ASVAB, and also presented their work on predicting AFQT scores from non-AFQT components of the battery. This last is a weighted sum of the General Information, General Science, Mathematics Knowledge, and Mechanical Comprehension components, which correlates 0.86 with AFQT. Until next meeting, AFRL and NERDC will do more work on the alternate forms, while MEPCOM studies the ARI and USMC proposals for operational feasibility.

AFRL reported on their Motivational Attrition Prediction Model at the prior meeting, and their plans to administer parts of it to 60,000 AFMS applicants. MAJ Sellman reported that, although the model contains a self-report instrument which appears somewhat sensitive, AF JAG approved it and AFRL targets a 17 March 1977 data collection start.

USMC representative reported on a meeting the previous day at Lowry AFB to discuss a demonstration of computerized testing in AFMS. This is fully described in J. McBride M/R of 22 February 1977, Subject: Report on First Meeting of Subcommittee for Computerized Adaptive Testing.

AFRL reported on development of Forms 8, 9, 10. A package presenting items and their statistical properties was distributed to all R&D representatives for review and comment prior to an R&D subcommittee meeting to take place at AFRL 2-3 March 1977.

A question was raised concerning R&D and O&M funds in the ASVAB program. A distinction was drawn between "development" and "maintenance," with the specific query of whether the services could provide O&M funds to AFRL for "maintenance." This and its implications must be discussed in-house at ARI prior to the next Working Group meeting.

Some discussion covered plans to develop a joint services interest test for ASVAB. At present the Army's Classification Inventory is operational in ASVAB, Air Force and Navy have none, but each have prospects in development. These may not be compatible, and coordination is required. Points of contact for this are Bill Alley, AFRL; Norm Abrahams, NERDC; and I identified Len Seeley for ARI.

MEPCOM, in support of high school programs has 7 O&M studies contracted, for a total of \$2.5-3.0 million. These are (a) military/civilian comparability of test scores, (b) methodology for validation follow-up which minimizes sample sizes and costs, (c) sophomore ASVAB scores as predictors of later high school success, (d) aptitude area compositing for common civilian occupations, (e) split-session testing, (f) ASVAB validity for post-secondary training, (g) ASVAB validity for job performance in specified civilian occupations.

PLRI-1L

SUBJECT: Report on ASVAB Working Group Meeting

Next meeting is scheduled for 23 April 1977 at NTRDC, San Diego.

6. Conclusions:

a. The implications of the services providing O&M funds to AFRL for test "maintenance" must be discussed with ARI Technical Director.

b. PA&U scientists will review the proposed Forms 8, 9, and 10 materials and will attend ASVAB W&D meeting at AFRL 2-3 March 1977.

7. Cost of Trip: \$115.00

2 Incl  
as

M. A. FISCHL, Ph.D.  
Work Unit Leader, Requirements,  
Retention & Utilization

CF:

Commander, ARI  
Technical Director, ARI  
Director, ITPRL  
Chief, PA&U  
Work Unit Leader, RR&U

## AGENDA

### ASVAB WORKING GROUP MEETING

26 JANUARY 1977

1. ASVAB-6/7 Validations (Report by Each Service)
2. Total Testing Time for ASVAB-5.
3. ASVAB-5 Conversion Tables
4. Pre-ASVAB Study Materials
5. AFQT Replacement Forms
6. Validation of the Motivational Attrition Prediction (MAP) Model
7. R&D of Computerized Measurement in Support of AFES Testing
8. Consideration of Test Security and Compromise Problems
9. Development of ASVAB-8/9/10
10. Funding of ASVAB Development and Maintenance
11. Inclusion of Joint Service Interest Test within ASVAB
12. Status of ASVAB R&D Contracts



DEPARTMENT OF DEFENSE  
HEADQUARTERS UNITED STATES MILITARY ENLISTMENT PROCESSING COMMAND  
FORT SHERIDAN, ILLINOIS 60037

22 DEC 1976

MEPCT

SUBJECT: Total Testing Time for the Institutional ASVAB

Commander

Headquarters Air Force Military Personnel Center

ATTN: DPMYO

Randolph Air Force Base, TX 78148

1. Based on a recent survey of 190 high schools tested during October 1976 with the institutional version of ASVAB, average total test time is running around 3 hours 10 minutes. A more complete description of the survey is contained in Inclosure 1.
2. From the onset of the DOD High School Testing Program in 1968, a recognized constraint has been the total time acceptable to our Nation's high schools. Maximum allowable time has typically been stated at 2½ hours (to include actual testing and administrative time); a time frame which fits well with the average one-half school day period. This is far below the average times experienced with ASVAB-5, and is a primary contributor to decreased acceptance of the new test during the current school year. As of 1 December 1976, we have tested 612,701 students in 8,462 schools, contrasted with 773,281 students in 9,837 schools during the same time frame in school year 1975-76. Although there are many factors that have contributed to this reduced acceptance of the program, we are convinced that increased testing time has been the major influence.
3. The average time of 3 hours 10 minutes puts our recruiting forces and test administrators in the untenable position of attempting to provide professional service to the high schools when:
  - a. There frequently is insufficient time between bus arrival and lunch to use the cafeteria for one session, forcing multiple room sessions. This taxes our resources to the maximum or forces cancellation.
  - b. The additional testing time plus travel time precludes accomplishing two sessions per day, thus compounding the scheduling and manning problems.

MEPCT

SUBJECT: Total Testing Time for the Institutional ASVAB

c. There is no opportunity to extend the test time due to unforeseen events, such as late bus arrival. The options available to the test administrator are all unsatisfactory: shorten the time for remaining subtests; skipping one or more subtests; release students before booklets are collected and accounted for; cancel the test session.

4. This Headquarters has, and will continue to, institute various actions in an attempt to reduce administrative times associated with the high school ASVAB. However, we have no control over time limits or the content of the test itself. At 2 hours 25 minutes, this block of time remains too long for satisfactory high school usage. Accordingly, I consider it imperative that you explore all possible alternatives to effect a further reduction of test length to a maximum of 2 hours, through the vehicle of the Joint Services ASVAB Working Group as chaired by AFMPC/DPHVO. It is suggested that the following options be considered, as a minimum:

a. Elimination from the institutional version of the test those subtests which are service specific.

b. Possible combination of subtests measuring aptitudes shown (through appropriate research) to be highly correlated.

c. Reverify time limits set for each component in the battery.

d. Investigate the possibility of eliminating questions from some of the subtests.

5. Please add any other actions to the above list which you feel would further the attainment of our goal of total test time of 2 hours or less, with an additional 30 minutes allowed for administrative time. This Command is most anxious to achieve the required reduction on the current version of the test in time for the onset of school year 1977-78. Moreover, it is deemed critical and absolutely necessary that this same goal be set for the follow-on high school version of ASVAB, Form 8.

6. The necessity for a 2-hour test is of vital concern to the commanders of all the recruiting services/commands and was a matter of unanimous



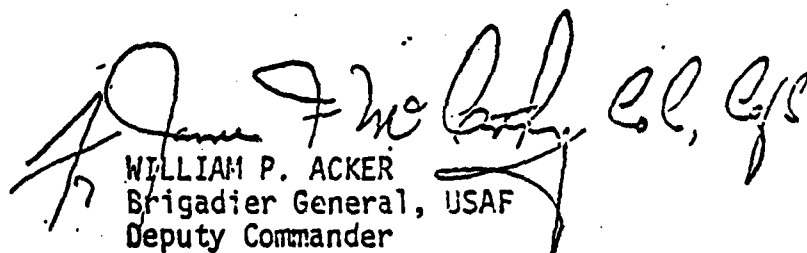
MEPCT

SUBJECT: Total Testing Time for the Institutional ASVAB

appeal at the 30 November 1976 meeting of the Joint Recruiting Commanders' Committee.

FOR THE COMMANDER:

1 Incl  
as

  
WILLIAM P. ACKERS  
Brigadier General, USAF  
Deputy Commander

CF:  
Cdr, AFHRL  
OSD (M&RA)  
HQDA (DAPE-MPE-CS)

## MINUTES

## ASVAB WORKING GROUP MEETING

26 JANUARY 1977

1. On 26 January 1977, an ASVAB Working Group meeting was held in conjunction with the Military Enlistment Processing Command ASVAB Seminar, Waukegan, Illinois. Attendees are shown at Attachment 1.

2. The following topics were discussed.

a. ASVAB-6/7 Validation. Representatives from each Service presented a status report of their validation efforts. Dr. Mike Fischl, Army Research Institute (ARI), indicated that the Army had completed data collection for many of their shorter MOS training courses. Validities are presently being computed on a sample of 35,000 to 40,000 cases. Preliminary validities corrected for restriction in range fell between .02 for wheel vehicle mechanic and .61 for radio operator with the majority in the .30s and .40s. Mr. Len Swanson, Navy Personnel Research and Development Center (NPRDC), then reported that Navy technical training criterion data collection was underway for between 50 and 60 courses. Analyses should be completed in April with a validation report to be published by July 1977.

The Air Force's progress as presented by Dr. Lonnie Valentine, Air Force Human Resources Laboratory (AFHRL), was that collection of technical training results for Air Force trainees in shorter courses had been completed and was presently being matched against ASVAB scores for validation analysis. In addition, because test compromise has recently become such a problem, AFHRL is administering ASVAB under controlled testing conditions to a limited sample of Air Force basic trainees. Correlating their test scores with training results rather than those tested under regular accessions conditions will provide a truer indication of validity and will also help avoid attenuation due to compromise. Dr. Valentine went on to point out that validation of ASVAB-3 has been completed and AFHRL technical reports which document the results are available.

Finally, Mr. Steve Gorman, HQ Marine Corps (HQ MC), noted that the Marine Corps is in the process of collecting criterion data on training course success. In that regard the Marine Corps is using ASVAB results on recruits tested at the recruit training centers as input to their validation studies. Mr. Gorman also said that the Center for Naval Analysis had completed a study which compared ASVAB-6/7 with the Army Classification Battery (ACB)-61. The analyses indicated that ASVAB-6/7 generally correlated well with ACB-61 except in the electrical,

field artillery, and combat aptitude areas. Further, the correlations of ASVAB-6/7 and ACB-61 with educational level and racial group were very similar ( $r = .80$ ) except in the above mentioned areas. The use of ASVAB-6/7 instead of ACB-61 may therefore slightly alter the educational and racial mixture in those areas.

b. Total Testing Time for ASVAB-5. Recently, high schools across the country have indicated that they plan to drop the DOD High School Testing Program because ASVAB-5 is too long. A MEPCOM survey indicated that at present the high school test requires slightly over three hours to administer. To be compatible with most school's available testing periods, a test of two hours is desirable. Colonel James Rodeen, MEPCOM, indicated that he recognized the dangers of shortening the test and stressed that he didn't want to destroy the scientific properties of ASVAB-5; yet at the same time, he believed the Working Group should consider all possible actions which would help alleviate the problem.

Four possible solutions were discussed. The first, elimination from the high school battery those subtests which are service specific, was discovered to be nonviable because there are no subtests used only by one Service. The other three, possible combination of subtests measuring aptitudes shown to be highly correlated, reverification of time limits set for each component in the battery, and investigation of the possibility of eliminating questions from some of the subtests were then considered. After lengthy discussion, it was concluded that these three options were also inappropriate because they would result in lowered test reliability (and hence validity) and would necessitate renorming of the entire battery. Further, the consensus of the Group was that adoption of any of the four proposals would result in more serious damage to the testing program than the test being of excessive length.

At this point, the deliberations turned to other potential solutions. Colonel Rodeen reported that split session testing seemed highly promising, but unfortunately the contract to investigate the effects of such a procedure on test reliability was in trouble and probably wouldn't be completed in time for testing at the beginning of SY 1977-78. Steve Gorman then agreed to see if the Marine Corps might be able to perform a similar study, as part of their recruit center retesting program, by July 1977 to aid MEPCOM in their decision. In addition, Colonel Rodeen also agreed to solicit suggestions from AFES personnel involved in the high school testing program on administrative procedures which could be streamlined to reduce overall testing time. These, along with administrative actions already in use, will then be sent to members of the Working Group for their review and further suggestions.

c. ASVAB-5 Conversion Tables. Lt Charles Tucker, BUPERS, pointed out that recently MEPCOM had put out ASVAB-5 conversion

tables based on ASVAB-6/7 without the coordination of the ASVAB Working Group. He went on to request that in the future such unilateral actions be avoided. Colonel Rodeen agreed that in the future MEPCOM would insure coordination of all ASVAB related actions within the Working Group. Mr. Steve Gorman then presented some Marine Corps data which indicated the revised conversion tables were still out of kilter for the entire ability range. He believed that the real normative values should be between the original and revised ones, and he recommended renorming. Mr. Len Swanson, NPRDC, on the other hand, had available Navy data which indicated that the norms did not deviate significantly from Navy's Basic Test Battery (BTB)-8. Mr. Swanson further suggested that renorming was not appropriate, especially now since ASVAB-8/9/10 are currently under development. The laboratory representatives agreed to continue to closely monitor the norms and report any irregularities in mental category distributions to the ASVAB Working Group.

d. Pre-ASVAB Study Materials. At the 18 October 1976 Working Group meeting, Mr. Lou Ruberton, Hq Department of the Army (HQ DA), indicated that the Army would take the lead in the development of pre-ASVAB study materials. These materials rather than teach the test would be used for test orientation and to somewhat reduce test anxiety. During the ensuing period, the Army Research Institute has developed an informational pamphlet which was sent to Working Group members for comment. All members agreed the pamphlet was a good beginning and should now be reviewed by a committee composed of representatives from the various recruiting commands. USAREC agreed to convene such a meeting and to brief the results at the next Working Group meeting.

e. AFQT Replacement Forms. During the 13 May 1976 Working Group meeting, Colonel James Rodeen asked AFHRL to develop alternative AFQT forms to supplement the three AFQT subtests (word knowledge, arithmetic reasoning, and space perception) in ASVAB in those areas where test compromise poses a serious problem. The AFQT replacement forms have been developed; however, ARI and NPRDC have expressed some concern over their apparent lack of scientific precision and have consequently not endorsed their use. In particular, Dr. Mike Fischl stated that it might be more appropriate to continue use of the original AFQT, even though it has been compromised in some areas, than to use the replacement forms. His rationale was that if only relatively few examinees are affected by compromise, then it would be better to access them with their erroneous scores than to accept all applicants with their less than precise ones. Unfortunately, there is no indication of just how widespread is the compromise problem. Accordingly, Dr. Fischl's ideas can neither be confirmed nor used as basis for a decision concerning use of the replacement AFQT forms.

Mr. Len Swanson, NPRDC, then indicated that he believed the precision problem was with the size and representativeness of

the sample used to develop the replacement forms. He recommended that additional data be collected to insure that the replacement forms really are statistically parallel to the existing versions. In that regard, AFHRL, NPRDC, and HQ MC will initiate projects to collect such data and will report the results at the next Working Group meeting.

Additionally, Dr. Fischl and Mr. Gorman presented two ideas for verifying AFQT scores. Mr. Gorman suggested that a replacement AFQT could be administered to all applicants. Then, those who achieved a passing score would take the full ASVAB with those scores used as input into the classification composites. Dr. Fischl followed and indicated that ARI had developed a regression equation which allowed the prediction of the word knowledge (WK) subtest from arithmetic reasoning (AR). Further, tables have been developed which consider the discrepancies between the two scores and then provide a probability of whether the difference is real, or rather a result of test compromise. However, before such procedures could be implemented, it is necessary to determine their potential impact on AFEES operations. Accordingly, Dr. Fischl and Mr. Gorman will provide their proposals to Colonel Rodeen, who in turn will forward them to the appropriate MEPCOM and AFEES office to determine their operational feasibility/acceptability.

f. Validation of the Motivational Attrition Prediction (MAP) Model. Major Steve Sellman, Air Force Military Personnel Center (AFMPC), provided a status report on the MAP validation test to be conducted at the AFEES. Sufficient materials have been mailed to MEPCOM to start the data collection. These include 12,000 copies of the Military Service Inventory (MSI), 40,000 answer sheets for use in completing the MSI, and 15,000 privacy act statements to be handed out to candidates. Further copies will be furnished as needed. The privacy act statement and the MSI have been cleared with AFMPC/JA and with the privacy act people in AFMPC as well as with the USAREC JAG.

In addition, a letter was sent to ODASD(P&R) requesting a ruling on the necessity of OMB clearance for the MSI. It was AFMPC's feeling that the MSI was exempt from OMB approval as outlined in paragraphs 9(c) and 9(d), OMB Circular A-40. OSD has agreed with that interpretation and has provided a favorable ruling. Further, a system of records notice has been formulated and sent forward for coordination. This notice must be approved by the Defense Privacy Board. Upon approval, the board will forward the notice to OMB who will review and, if satisfactory, will publish it in the Federal Register. By law, the public then has 30 days to respond in writing with objections to the notice. If no objections are received, data collection can then proceed. The MAP notice was forwarded to the Defense Privacy Board for their review on 4 January 1977. They have reviewed and approved it, and forwarded it to OMB on 10 February 1977. Major Sellman anticipated that if there are no objections to the

proposed notice in OMB, that data collection for the AFEES test could begin on 10 April 1977.

g. R&D of Computerized Measurement in Support of AFEES Testing. Mr. Steve Gorman summarized recent developments in this area. On 12 January 1977, DDR&E sponsored a Training and Personnel Technology Conference on computerized adaptive testing R&D being conducted within the Department of Defense. A brief analysis of the need for such research; its progress, adequacy, and timeliness; gaps of knowledge or technology; areas which require additional effort; and progress of inter-Service coordination were discussed. The conference assembled approximately 50 individuals from Service personnel and R&D agencies as well as representatives from DDR&E and OASD(M&RA).

Following that meeting, the MEPCOM Testing Directorate hosted the newly established Joint Services Working Group on R&D Applications of Computer Technology to Military Personnel Acquisitions on 13-14 Jan 1977. Dr. Martin F. Wiskoff, NPRDC, served as chair with other members of the group representing NPRDC, ONR, ARI, AFHRL, AFMPC, HQ Marine Corps and MEPCOM. Each of the Service laboratories outlined their ongoing research in the development of computer technology to assist personnel procurement and occupational assignment/placement. For example, NPRDC has developed a computerized counseling system which uses ASVAB in conjunction with a short interest test to counsel high school students on both civilian and Navy jobs. Further, AFHRL was instrumental in the development of a computerized person-job match algorithm (PROMIS) which is presently in use in the classification of Air Force recruits. ARI has work units in both these areas as well as plans for adaptive testing research. Obviously, there is the very real danger of wasteful duplication of effort in this area. The primary goal of the Working Group was, therefore, to develop an approach for joint service coordination/cooperation on future research efforts pertaining to a "military accessioning system." The 13-14 January meeting also served as a planning session for a DDR&E Training and Personnel Technology Conference, now scheduled for the spring of 1977.

In addition, Dr. Lonnie Valentine discussed the Air Force's plan to develop, demonstrate, and evaluate a computerized measurement system for use in Armed Forces Examining and Entrance Stations (AFEES). In that regard, AFHRL is currently preparing a prototype demonstration model to be placed in the San Antonio AFEES. In addition to providing a look at what computerized testing is all about, it will enable AFHRL to gain first hand knowledge of AFEES requirements vis-a-vis computer display arrays so that future hardware may be more appropriately human engineered. Once the prototype is in operation, plans call for a second one to be installed at either MEPCOM or the Chicago AFEES to demonstrate the state-of-the-art technology to MEPCOM's visiting firemen.

h. Development of ASVAB-8/9/10. Dr. Lonnie Valentine presented a status report on the development of the new versions of ASVAB. Under contract, test items have been prepared and preliminary forms of the subtests developed. At the present Working Group meeting, copies of these subtests were provided to each Service's testing policy staffers and laboratory scientists who will convene at AFMPC on 2-3 March 1977 for their review. It is anticipated that at the March meeting, items for inclusion in the final versions of ASVAB-8/9/10 can be selected so AFHRL can begin finalization of the battery.

i. Consideration of Test Security and Compromise Problems. Mr. Dick Hoshaw, BUPERS, discussed the problem of Navy not being advised in a timely manner of ASVAB test compromise reports received by MEPCOM, nor of receiving copies (or summaries) of test compromise investigations. Major Steve Sellman pointed out that this was also true for the Air Force. Mr. Hoshaw requested that in the future the Bureau of Naval Personnel (PERS-2) be promptly advised of all test compromise information and be provided copies or summaries of all test compromise investigations. Such information is considered by Navy as both critical and essential in order that BUPERS policy representatives can fully assess and implement needed changes. Mr. Ruberton, HQ DA, agreed that the present test compromise reporting procedure needs revision and agreed to provide a procedure which when approved by the Services would permit all Services to have the same information as requested by Navy.

j. Funding of ASVAB Development and Maintenance. Major Steve Sellman discussed AFHRL's problem with the funding of ASVAB development and maintenance. He pointed out that AFHRL's budget is composed entirely of R&D funds and that there are many high level R&D program managers within the Air Force who believe that since test development and maintenance is not R&D, that the monies have not been effectively used. This leads to budget difficulties with the continuing danger of reductions in AFHRL's budget. One solution would be for MEPCOM to fund AFHRL's test development activities; another would be for each Service to provide O&M monies on a pro-rata basis (Army-40%, Navy-25%, Air Force-25%, Marine Corps-10%). Major Sellman reported that AFHRL expends approximately \$150,000 annually in test development and maintenance, and he asked each Service to check on the possibility that reimbursement might be made available.

k. Inclusion of Joint Service Interest Test Within ASVAB. Dr. Lonnie Valentine, AFHRL, recalled discussions at earlier Working Group meetings concerning the possibility of developing a Joint Service interest inventory. Dr. Valentine went on to describe AFHRL's current efforts to develop an Air Force interest test and suggested that since the other Service laboratories also had similar projects underway, that it might prove beneficial to all for the respective scientists to communicate their progress.

In that regard, Dr. Valentine indicated that Mr. Bill Alley, AFHRL, would contact the other appropriate Service researchers to initiate an informal sharing of ideas.

3. The next meeting of the ASVAB Working Group will be sponsored by HQ Marine Corps and held in Washington DC on 28 April 1977.



# ATTENDEES

## ASVAB WORKING GROUP MEETING

26 JANUARY 1977

| <u>NAME</u>            | <u>ORGANIZATION</u>                             | <u>TELEPHONE NR.</u> |
|------------------------|---|----------------------|
| ALLISON, Capt Karen A. | Hq MC (MRRE-2)<br>Wash DC                       | A: 224-2523          |
| AMISON, MSgt James D.  | USAREC<br>Ft Sheridan, IL                       | A: 459-2644          |
| BOWRING, Maj L. T.     | USAREC<br>Ft Sheridan, IL                       | A: 459-2675          |
| DOUGHERTY, Mr Jack     | Navy Recruiting Cmd<br>(Code 56A) Arlington, VA | A: 222-4891          |
| FISCHL, Dr M. A.       | Army Research Institute<br>Arlington, VA        | A: 224-4020          |
| GESLING, Capt M. L.    | Navy Recruiting Cmd<br>(Code 21) Arlington, VA  | A: 222-4185          |
| GORMAN, Mr Steven      | Hq MC (MPI-20)<br>Wash DC                       | A: 224-4166          |
| HOGGATT, Col R. S.     | Hq AFHRL<br>Brooks AFB, TX                      | A: 240-3605          |
| HOSHAW, Mr C. R.       | BUPERS (Pers 212b)<br>Wash DC                   | A: 224-1614          |
| HOUTZ, Mr John         | USAREC<br>Ft Sheridan, IL                       | A: 459-2675          |
| JENNETTE, LtCol L. F.  | MEPCOM<br>Ft Sheridan, IL                       | A: 459-2550          |
| MASSAR, Mr R. S.       | MEPCOM<br>Ft Sheridan, IL                       | A: 459-2550          |
| MILLER, Mr T.          | CNTECHTRA<br>Memphis, TN                        | A: 966-5594          |
| NICHOLS, CW03 Larry    | Navy Recruiting Cmd<br>(Code 334) Arlington, VA | A: 222-4971          |

| <u>NAME</u>           | <u>ORGANIZATION</u>             | <u>TELEPHONE NR</u> |
|-----------------------|---------------------------------|---------------------|
| RODEEN, Col James     | MEPCOM<br>Ft Sheridan, IL       | A: 459-2366         |
| RUBERTON, Mr Louis A. | HQ DA (DAPE-MPE-CS)<br>Wash DC  | A: 225-0836         |
| SELLMAN, Maj W. S.    | AFMPC/DPMYO<br>Randolph AFB, TX | A: 487-2978         |
| STENGEL, LtCol C.     | MEPCOM<br>Ft Sheridan, IL       | A: 459-2550         |
| SWANSON, Mr L.        | NPRDC<br>San Diego, CA          | A: 933-2181         |
| TUCKER, Lt C. W.      | BUPERS (Pers 551)<br>Wash DC    | A: 224-1370         |
| TUCKER, Maj C. L.     | MEPCOM<br>Ft Sheridan, IL       | A: 459-2550         |
| VALENTINE, Dr L. D.   | AFHRL/PES<br>Lackland AFB, TX   | A: 473-3827         |

**PROPOSED AGENDA**

**ASVAB WORKING GROUP MEETING**

1. ASVAB-6/7 Validation (Report by Each Service)
2. Impact of Split Session Testing on ASVAB Reliability
3. Accuracy of ASVAB-6/7 Conversion Tables
4. Pre-ASVAB Study Materials
5. AFQT Replacement Forms
6. Validation of the Motivational Attrition Prediction (MAP) Model
7. R&D of Computerized Measurement in Support of AFEEES Testing
8. Development of ASVAB-8/9/10
9. Funding of ASVAB Development and Maintenance

Dr. W. H. Hooprich  
(1)

310CH:arw  
POKDO05  
Ser 3186  
1 APR 1977

From: Commanding Officer  
To: Chief of Naval Personnel

Subj: Documentation of NPRDC proposed ASVAB-Basic Test Battery AFQT  
Score Equivalances

Ref: (a) BUPERS ltr Pers-Or-bc ser Or/11 of 1 Mar 1977  
(b) NPRDC ltr OIA:WWW:rc POKDO05 ser 3173 of 28 Mar 1977

Encl: (1) Development of Revised Mental Group Definitions dated March 1977

1. In accordance with references (a) and (b), enclosure (1) is forwarded.

J. J. CLARKIN

Copy to:  
BUPERS (Pers-21)

Blind copy to:  
BUPERS (Pers-Or)  
Mr. Hooprich

**DEVELOPMENT OF  
REVISED MENTAL GROUP DEFINITIONS**

**MARCH 1977**

**NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER  
SAN DIEGO, CALIFORNIA 92152**

## DEVELOPMENT OF REVISED MENTAL GROUP DEFINITIONS

### Background

Prior to January 1976, mental groups were determined by conversion of Basic Test Battery (BTB) scores to AFQT percentile scores. After installation of the Armed Services Vocational Aptitude Battery (ASVAB) as the official screening instrument, mental groups were calculated by conversion of ASVAB raw scores to AFQT percentile scores. It was observed that the mental group distribution of recruits entering after January 1976, the ASVAB inception date, varied from the mental group distribution of recruits entering prior to that period. The principal difference was in the higher percentage of men at the upper mental groups as determined by ASVAB scores. Comparison of recruit samples on which both BTB and ASVAB scores were available showed that the two batteries did indeed produce different mental group distributions. The first two columns of Table 1 illustrate the difference for one sample of recruits. The sample consists of 371 recruits who took the ASVAB Form 6 in October and November in 1975, for purposes of standardizing the ASVAB. (These recruits had earlier taken the BTB prior to service entry during the applicant processing cycle.)

Table 1

Percentages Within Mental Groups Generated by Different Conversion Tables

|     | <u>Form 6 Standardization Sample</u> |             |               | <u>Navy Input Data</u> |                            |
|-----|--------------------------------------|-------------|---------------|------------------------|----------------------------|
|     | 1                                    | 2           | 3             | 4                      | 5                          |
|     | BTB                                  | First ASVAB | Current ASVAB | Oct-Dec 1975 BTB       | Oct-Dec 1976 Current ASVAB |
| 1   | 4.0                                  | 15.4        | 8.4           | 3.5                    | 9.0                        |
| 2   | 35.3                                 | 52.3        | 36.9          | 38.1                   | 36.7                       |
| U3  | 34.2                                 | 17.3        | 31.5          | 33.0                   | 27.8                       |
| L3  | 20.4                                 | 10.2        | 18.3          | 21.5                   | 24.1                       |
| 4&5 | 5.9                                  | 4.9         | 4.9           | 4.0                    | 2.4                        |
| SE* | 73.5                                 | 85.0        | 76.8          | 74.6                   | 73.5                       |

Key - Column 1 - Form 6 sample mental group based on BTB conversion table.

Column 2 - Form 6 sample mental group based on first ASVAB conversion Table.

Column 3 - Form 6 sample mental group based on September 1976 revision of ASVAB conversion (current ASVAB table).

Column 4 - Recruiting data for input during October through December 1975; mental group based on BTB conversion table.

Column 5 - Recruiting data for input during October through December 1976; mental group based on September 1976 revision of ASVAB conversion (current ASVAB table).

\*SE - School Eligible--the sum of mental groups 1, 2 and Upper 3.

Joint service review of the ASVAB conversion issue resulted in the introduction of a new conversion table (ASVAB raw to AFQT percentile) in September 1976. While the revised conversion table produced a closer match between mental group distributions determined by the two batteries, a noticeable degree of discrepancy remained. Column 3 of Table 1 illustrates the results in the Form 6 standardization sample when the revised conversion table is employed.

Percentages of School Eligible personnel (total of mental groups 1, 2 and Upper 3) are shown as another dimension of comparison in Table 1. Column 4, input figures for October through December of 1975, when compared with column 1, the distribution observed in the Form 6 sample, (which entered the NTC's during this time period) indicates that the Form 6 sample was fairly representative of the input population from which it was drawn.

### Problem

The discrepancies between the distribution of mental groups determined from the ASVAB and that determined from the Basic Test Battery have a direct bearing on the screening procedure utilized in the SCREEN system of applicant evaluation. The SCREEN employs mental group as one of the component factors in developing quality indicators. The current SCREEN tables were developed in 1973, at which time the mental group characteristics of the sample employed was determined from the Basic Test Battery. Use of mental groups determined by the ASVAB conversion table, it was feared, would have a distorting effect on the SCREEN system, such that the apparent quality of some applicants would be higher than the "true" quality, declaring the BTB mental group to be the "true" metric.

In order to bring the mental group designation for SCREEN use in closer congruence with the method upon which SCREEN was developed it was desired to redefine mental group limits derived from ASVAB scores to yield a mental group distribution closer to that derived from Basic Test Battery scores, i.e., the distribution which would result if the applicants had been administered and evaluated on the Basic Test Battery.

The method does not change the "official" mental group of any person entering the Navy, and does not alter the official ASVAB/AFQT percentile conversion table.

### Samples

In order to compare mental group distributions from each battery it was necessary to use samples of people who had taken both. Three such samples were available:

a. Recruits tested on ASVAB 6 at the NTC's in October and November 1975 for the purpose of standardizing Form 6 of the ASVAB (N=371). (This sample has already been cited in connection with Table 1.)

b. A similar recruit sample for ASVAB 7 Standardization (N=323).

c. A group of recruits tested on ASVAB 7 at the NTC's in early 1976 who has been earlier tested on BTB in the field (N=1269).

Since both ASVAB scores and BTB scores were available for these samples, comparisons between the two mental group distributions could be made.

Although the NTC retest sample was larger than the other two, the principal focus in deriving the redefinition was placed on the standardization samples. This was because it was believed they were more representative of the actual recruit input during the period the data were collected than was the NTC retest sample. Table 2 shows the percentage within each mental group for the two standardization samples as compared to the distribution reported for the input during the same period.

Table 2

Percentages Within Mental Groups for Standardization Samples and Input

|     | Form 6 Samples<br>(Tested Oct-Nov 75) | Form 7 Sample<br>(Tested Oct-Nov 75) | Input<br>(Oct thru Dec 75) |
|-----|---------------------------------------|--------------------------------------|----------------------------|
| 1   | 4.0                                   | 3.4                                  | 3.5                        |
| 2   | 35.3                                  | 34.4                                 | 38.1                       |
| U3  | 34.2                                  | 37.5                                 | 33.0                       |
| L3  | 20.5                                  | 20.4                                 | 21.5                       |
| 4&5 | 5.9                                   | 4.3                                  | 4.0                        |

The mental group percentages in the above table are generated from the Basic Test Battery conversion table for all three sets of data.

A test of significance ( $X^2$ ) was applied to these data, comparing the figures from each standardization sample against the input figures. (Numbers of people within each group were used, rather than percentages. To do this, the percentage figures for the input were used to compute frequencies based on corresponding sample sizes, i.e.,  $N=371$  when compared with the Form 6 sample,  $N=323$  when compared with the Form 7 sample.)

The values obtained from the  $X^2$  test directly reflect the differences between the numbers being compared. Consequently, the higher the  $X^2$  values, the more significant is the difference between distributions; that is, the more likely that the difference between distributions is due to some factors other than mere chance. With this set of data, it would be necessary to obtain  $X^2$  values greater than 9.00 to postulate significance at the .10 level or beyond. Since the obtained values for the Form 6 and Form 7 samples respectively, were 4.69 and 3.13, it is judged that the distributions being compared are fundamentally similar in composition and that the degree of difference between them could be attributed to sampling error, or chance factors. That is, both the Form 6 and Form 7 samples are representative of the input population for the same period in terms of mental group distribution.



The data for the NTC retest sample could not be compared directly with the input data for the corresponding period, since the BTB generated distribution of mental group in the input group was not available. Three comparisons were made for the NTC retest sample:

- a. Mental group distribution for NTC retest sample (BTB generated) versus mental group distribution for October-December 1975 input (BTB generated).
- b. Mental group distribution for NTC retest sample (BTB generated) versus mental group distribution for input for January through March 1976 (ASVAB generated).
- c. Mental group distribution for NTC retest sample (ASVAB generated) versus mental group distribution for January through March 1976 input (ASVAB generated).

None of the comparisons demonstrated a good fit, (all  $X^2$  values were higher than 20.0).

Because of these facts, and because a direct statement of the representativeness of the NTC retest sample to the input for the period could not be made, it was decided that the NTC sample could not be considered as representative of input as were the standardization samples. It is noted that the people in the NTC retest sample were primarily CACHE input, who had been tested in 1975, but not sent to the NTC's until 1976. As such they are not expected to be representative of normal input, but be of somewhat higher quality. The standardization samples on the other hand, reflected a deliberate attempt to obtain distributions similar to the input for the period. Although the NTC retest sample was not used directly for the redefinition of mental groups, it was used to furnish supplementary information on the procedure.

#### Procedure/Results

The redefinition of mental group was developed by examination of comparable mental group distributions in the Form 6 and Form 7 standardization samples, with some trial and error, to obtain a good fit, i.e., bringing the ASVAB determined mental group distribution closer to the BTB determined distribution. Table 3 shows the resultant redefinition of mental group against the official definition.

Table 3  
Mental Group Definitions in Terms of Percentile Scores

| <u>Mental Group</u> | <u>Official Limits</u> | <u>Proposed Limits</u> |
|---------------------|------------------------|------------------------|
| 1                   | 93-100                 | 95-100                 |
| 2                   | 65-92                  | 67-94                  |
| U3                  | 49-64                  | 50-65                  |
| L3                  | 31-48                  | 35-49                  |
| 4&5                 | 0-30                   | 0-33                   |

Table 4 shows the distribution within mental groups as determined by three procedures, i.e., by BTB conversion, by operational ASVAB conversion, and by redefinition of mental groups limits.

Table 4

Percentages Within Mental Groups for Different Conversion Procedures

| <u>Mental Group</u> | <u>Standardization Sample, Form 6 (N=371)</u> |  |   |
|---------------------|---|--|---|
|                     | <u>1</u><br><u>BTB</u>                        | <u>2</u><br><u>Current</u><br><u>ASVAB</u> | <u>3</u><br><u>NPRDC</u><br><u>Proposed</u> |
| 1                   | 4.0   | 8.4  | 3.8   |
| 2                   | 35.3  | 36.9                                       | 37.1  |
| U3                  | 34.2  | 31.5                                       | 32.1  |
| L3                  | 20.5  | 18.3                                       | 20.8  |
| 4&5                 | 5.9   | 4.9  | 6.2   |
| SE*                 | 73.5  | 76.8                                       | 73.0  |

| <u>Standardization Sample, Form 7 (N=323)</u> |      |      |      |
|---|------|------|------|
| 1   | 3.4  | 7.7  | 4.3  |
| 2   | 34.4 | 32.5 | 32.8 |
| U3  | 37.5 | 36.2 | 38.4 |
| L3  | 20.4 | 20.4 | 19.2 |
| 4&5   | 4.3  | 3.1  | 5.3  |
| SE*   | 75.3 | 76.4 | 75.5 |

| <u>NTC Retest Sample (N=1269)</u> |      |      |      |
|-----------------------------------|------|------|------|
| 1                                 | 4.6  | 11.5 | 6.5  |
| 2                                 | 45.3 | 39.2 | 40.9 |
| U3                                | 29.2 | 29.5 | 30.5 |
| L3                                | 17.4 | 16.9 | 16.8 |
| 4&5                               | 3.4  | 2.9  | 5.3  |
| SE*                               | 79.1 | 80.2 | 77.9 |

Key - Mental group distribution as determined by; 1--BTB Scores; 2--Current ASVAB Conversion, Sept 1976 version; 3--NPRDC Proposed Redefinition (based on last column to Table 3.

\*SE - School Eligible--Sum of mental groups 1, 2 and Upper 3.

As part of the development of the proposed mental group redefinition, the similarity between the BTB distribution and the various ASVAB distributions were tested by the  $X^2$  method, (using actual numbers rather than percentages). The resultant  $X^2$  values are shown in Table 5. In each case the BTB mental group distribution is used as the yardstick, i.e., the expected value against which the indicated distribution is compared.

Table 5  
 $X^2$  Values for Mental Group Distribution

|                   | <u>Official</u> | <u>Proposed</u> |
|-------------------|-----------------|-----------------|
| Form 6 Sample     | 19.70           | 0.94            |
| Form 7 Sample     | 19.41           | 2.0             |
| NTC Retest Sample | 139.89          | 28.61           |

Key - "Official" - BTB distributions compared with current ASVAB distribution (Columns 1 and 2 of Table 4).

"Proposed" - BTB distributions compared with revised distribution (Columns 1 and 3 of Table 4).

As previously noted, the larger the  $X^2$  values the lesser degree of confidence the two distributions being compared are similar in composition. The two values in the "Proposed" column for the Form 6 and Form 7 standardization samples are far from significant, i.e., the differences between the two distributions are very likely due to chance and sampling errors. While the NTC retest sample yields a  $X^2$  which is significant, i.e., a reasonable congruence has not been achieved, this may be expected since the revision was based on the other two samples. At the same time, the  $X^2$  value from the NTC retest sample is considerably reduced by the revision, indicating a marked improvement over the operational system.

#### Conclusion

For the three samples used in this procedure, the proposed redefinition of mental groups has brought about closer congruence of mental group distribution as determined by ASVAB to that determined by BTB. It is believed that this result will hold up in other groups of personnel. Consequently, the use of the proposed redefinition may be recommended for use in the SCREEN procedure of applicant assessment.

Suggested Outline for Renorming ASVAB 6-7

ARI

8 July 1977

Personal visit--no "phone contact only"

AFEES: 12. 4 each--Army, Navy, Air Force

(Alternative: 14, --2 for Marines + 12 as above)

Total N: 2000 +; representative distribution

1000 Form 6; 1000 Form 7

Minimum 10% Females, Max. 20%

15% Black, Max 20%

50 usable cases per decile to be sought, per form, for analysis.

So 167 (180) cases per AFEES (Average) required.

Operational testing with safeguards, --careful Proctoring

Use of ARI compromise detector on WK-AR-to discard doubtful cases.

## Reference Test.

(a) AFQT from ASVAB 2-3 *This is a good alternative*

|    |                 |                        |
|----|-----------------|------------------------|
| AR | 25 Items        | 25 mins.               |
| WK | 25 Items        | 10 mins.               |
| SP | <u>25 Items</u> | <u>15 mins.</u>        |
|    | 75 Items        | 50 mins. + admin. time |

(b) AFQT from ACB-73 *Test booklet available, not confidential*

|    |                 |                        |
|----|-----------------|------------------------|
| AR | 20 Items        | 20 mins.               |
| WK | 20 Items        | 8 mins.                |
| SP | <u>20 Items</u> | <u>15 mins.</u>        |
|    | 60 Items        | 43 mins. + admin. time |

Prefer (a).

## Counterbalanced order of administration

1/2 of cases; operational ASVAB 6 or 7; then Reference

Test

1/2 of cases; Reference test; then Operational ASVAB 6 or 7

Original of answer sheets to be forwarded to USAF for analysis along with Reference Test.

(Alternative: AFEES to forward work sheet in lieu of ASVAB answer sheet)

Reference test not to be scored at AFEES

AFEES to provide for each case: Race, sex, age, years of education.

Problem: Privacy Act, Administration of Reference Test

## MINUTES

## ASVAB WORKING GROUP MEETING

12-13 July 1977

1. On 12-13 July 1977, an ASVAB Working Group meeting was held at the Navy Personnel Research and Development Center, San Diego, California. Attendees are shown at Attachment 1.

2. The following topics were discussed.

a. Validation of ASVAB-5 High School Composites. Major Steve Sellman, Air Force Military Personnel Center (AFMPC), provided a status report on recent correspondence and dialog with Buros' Mental Measurement Yearbook ASVAB reviewers. In particular, he discussed letters between himself and Dr Lee J. Cronbach, Stanford University, concerning the new high school composites; and between Cronbach and Dr Lonnie Valentine, Air Force Human Resources Laboratory (AFHRL) concerning the propriety of presenting socio-political viewpoints in technical reviews. In addition, Major Sellman described interactions with Dr Robert M. Guion, Bowling Green State University, another ASVAB reviewer; and with Dr Leonard V. Gordon, State University of New York at Albany, a close personal friend of Buros. These individuals were provided copies of all correspondence and ASVAB technical reports. There had been some indication that Cronbach might not plan to alter his original draft review, and providing up-to-date information on ASVAB-5 to other reviewers would insure that some of the reviews would be current. Further, Major Sellman told of his plans to provide all relevant documents to Dr David J. Weiss, University of Minnesota, the third of the Buros' reviewers. This was to be accomplished at the Office of Naval Research (ONR) conference on computerized adaptive testing, scheduled at the University of Minnesota, 19-22 July 1977.

Dr Harry Wilfong, Military Enlistment Processing Command (MEPCOM), discussed their need for Service validation information for inclusion in the ASVAB Counselors' Manual. Air Force and Navy data were provided. Dr Mike Fischl, Army Research Institute (ARI), reported some validity information and promised to forward additional Army data to MEPCOM shortly. Plans for a joint laboratory technical report on the development and validation of the new high school composites were then discussed. Dr Valentine indicated that he would write the first draft and incorporate inputs on Service validities from ARI and Navy Personnel Research and Development Center (NPRDC). The draft is scheduled for completion in October 1977.

While the on-going discussion centered around ASVAB and its acceptance by agencies and individuals outside the Department of Defense (DOD), Dr Eli Flyer, Office of the Deputy Assistant Secretary of Defense (Military Personnel Policy) (ODASD/MPP), discussed two related issues. The National Academy of Sciences (NAS) will, over the next two years, be undertaking a national assessment of aptitude testing. Within the Federal Government, Departments of Labor; Health, Education, and Welfare; and Defense plus the Civil Service Commission have agreed to cooperate. Accordingly, there will be a panel on military testing with one full time NAS staffer. Dr Flyer asked that the Working Group select a representative to serve as DOD liaison with the panel. Major Sellman indicated that before the next meeting he would poll the members for their nominations and report back to Dr Flyer.

Finally, Dr Flyer summarized the recent GAO report entitled, "A Need to Address Illiteracy Problems in the Military Services." Several of the report's recommendations related to the possible use of reading information as an input to selection and classification decisions. The Working Group then discussed if such issues were within the Group's purview; it was decided they were. Dr Flyer then suggested that perhaps the next meeting of the Working Group should be completely devoted to literacy and its relevance to military enlistment eligibility. Major Sellman said that he would organize such a meeting for early September 1977.

b. Validation of ASVAB-6/7. Each of the Service scientists presented up-dates on their validation studies. Mr Len Swanson, NPRDC, indicated that Navy efforts were almost completed, while Mr Steve Gorman, HQ Marine Corps (HQ MC), noted that their initial results would be finished by the end of the year. Dr Lonnie Valentine, AFHRL, and Dr Mike Fischl, ARI, both informed that training results for approximately 35,000 accessions respectively were being matched against ASVAB test scores. Results should be imminent.

On the issue of common composites, both Mr Swanson and Dr Valentine indicated that they were looking at the validity of the other Service composites for their training criteria as well as ASVAB sub-test scores. These analyses should also be completed shortly. Dr Fischl pointed out, however, that it would be 1978 before Army would have similar results.

c. Accuracy of ASVAB-6/7 Conversion Tables (Possible Restandardization). Dr Mike Fischl indicated that there was still some ARI concern over the accuracy of the ASVAB-6/7 norms. He suggested another standardization might be in order. The Working Group then discussed the difficulties of collecting such

norming data given the time constraints at Armed Forces Examining and Entrance Stations (AFEES). An ARI outline of the specifications for the restandardization was distributed by Dr Fischl. At that point, Mr Steve Gorman, HQ MC, pointed out that he had ASVAB-6/7 and Army Classification Battery-61 data on 3,000 Marine recruits which he believed were normally distributed and free of any influence of test compromise. He suggested these data might be used to develop new norms. Service scientists agreed that they would review both the Marine Corps data and the ARI outline and by the next meeting of the Working Group determine which ones to use in developing new norms.

d. AFQT Replacement Forms. At the 26 January 1977 Working Group meeting, Dr Mike Fischl and Mr Len Swanson expressed concern that the scientific precision of the AFQT replacement forms developed by AFHRL was not suitably great to warrant their implementation. Mr Swanson further suggested that the problem was with the size and representativeness of the sample used to develop the replacement forms. Mr Steve Gorman and Dr Fischl then presented two ideas for verifying AFQT scores. Mr Gorman suggested that a replacement AFQT could be administered to all applicants. Then, those who achieved a passing score would take the full ASVAB with those scores used as input into the classification composites. Before this plan could be implemented, however, the replacement forms required more standardization through experimental testing at the AFEES. Dr Fischl followed and indicated that ARI had developed a regression equation which allowed the prediction of word knowledge (WK) from arithmetic reasoning (AR). Tables had been developed which considered the discrepancies between the two scores and then provided a probability of whether the difference was real, or rather a result of compromise. Both proposals were to be provided to MEPCOM for staffing.

At the present meeting, Dr Harry Wilfong, MEPCOM, reported that Dr Fischl's proposal has been implemented and that experimental testing for replacement norming will begin at the AFEES in August 1977.

e. Impact of Split Session Testing on ASVAB Reliability. For the past year, MEPCOM, through a contract to L. L. Streeter, Assoc., has been investigating the impact of split session testing on test reliability. If such split session testing has no adverse impact, then testing could be administered in two different sittings rather than one. Obviously, this would afford MEPCOM considerable flexibility in scheduling their high school program. Dr Wilfong reported that the contractor is now analyzing results of the study.

f. Pre-ASVAB Study Materials. At the 26 January 1977 Working Group meeting, Mr Lou Ruberton, HQ Department of the Army (HQ DA), indicated that the Army would take the lead in the development of pre-ASVAB study materials. These materials rather than teach the test would be used for test orientation and to somewhat reduce test anxiety. At the present meeting, Mr Ruberton informed the Working Group that the final draft of the materials had been completed and would soon be forwarded to Working Group members for Service review and coordination.

g. Development of ASVAB-8/9/10. Dr Lonnie Valentine, AFHRL, presented a status report on the development of the new versions of ASVAB. In addition, he had prepared and disseminated to Working Group members a test design and specification plan which detailed test content and the psychometric properties of test items. After some discussion, the Working Group decided to postpone finalization of the plan until validation of ASVAB-6/7 had been accomplished. It was felt that such validity information might provide insights concerning possible deletion of some of the subtests. Further, Major Steve Sellman, AFMPC, stated that once the test prototype was established, the Working Group still planned to provide it to MEPCOM to ensure it was properly human engineered for maximum AFEES use.

h. HR 6776, Testing Reform Act of 1977. Major Sellman discussed the pending legislation introduced by Congressman Michael Harrington (D-Mass) which if enacted would among other things require testing agencies to release the content of their tests to examinees 30 days after testing. The Air Force Judge Advocate believed the proposed law would be applicable to the Services. Accordingly, Major Sellman had provided copies of the bill to the testing policy staffers of the Services for review and comment. Once he has received their inputs, he will forward a joint-Service position to ODASD(MPP) for review by OSD General Counsel. It was hoped that the final product would be a DOD position which could be forwarded to the Congress.

i. R&D of Computerized Measurement in Support of AFEES Testing. Mr Steve Gorman described Marine Corps progress in their recruit testing project. He indicated that ASVAB-like items were currently being calibrated for computer administration, with their testing system scheduled for implementation in December 1977. Dr Lonnie Valentine then discussed the Air Force computerized testing system prototype now on-line at the San Antonio AFEES. Data are being collected on approximately six examinees a day using the subtests which make up the AFQT. Finally, Major Sellman informed the Working Group of the ONR conference on computerized adaptive testing to be conducted at Minneapolis, MN on 19-22 July 1977. More details on the conference will be provided at the next Working Group meeting.



j. Validation of the Motivational Attrition Prediction (MAP) Model. Major Steve Sellman summarized recent developments in this area. He indicated that he had briefed OMB on the project on 8 April 1977 and had received their approval. Further, he noted that the AFEES test had subsequently begun on 9 May 1977. To date, 66,000 answer sheets have been received and are being prepared for optical scanning. Tracking of Service accessions for MAP validation will soon begin.

k. Status of ASVAB Research & Development. Dr Harry Wilfong summarized the status of MEPCOM R&D contracts. The status of each contract is presented below.

(1) TITLE: Developing Comparability Indices Between Service and Civilian Occupations.

Contractor: Applied Psychological Services.

Purpose: To examine, through job analysis, relationships between common service and civilian jobs as listed in the Military/Civilian Occupational Source Book, and to recommend ASVAB profiles where validity data are available.

Status: Project completed. Contractor studied a sample of 52 (military and civilian) jobs; developed commonality indices. Found moderate commonality across common job areas. Proposed ASVAB-5 profiles (using only the four subtests also measuring DOT aptitude areas) for the 52 jobs surveyed. Will be released as ASVAB Technical Research Note. Contractor needs to build full range of ASVAB-5 profiles (using all 12 subtests) in followup study.

(2) TITLE: Development of an ASVAB Validation Approximation Technique.

Contractor: Applied Psychological Services.

Purpose: To determine the feasibility of estimating (from job analysis data) ASVAB validity for specific jobs, where validity data do not exist.

Status: Completed. Methodology developed using the PAQ (Position Analysis Questionnaire). Will be recommended to, and discussed with, ASVAB Working Group to determine applicability for interservice research. Limited use for high school counselors.

(3) TITLE: Feasibility Analysis: Longitudinal Analysis of ASVAB.

Contractor: Psychometrics, Inc.

Purpose: To explore costs, methods, pitfalls associated with long range (e.g., 6 years) validation of ASVAB.

Status: Phase IV Report submitted. Estimated costs not as high as expected (e.g., \$375 k vs. 2.5 M projected for full-blown followup approach). Looks like traditional 6-year followup (i.e., 1976/77 ASVAB-5 correlated against 2-4-6 year performance criteria) optimum approach.

(4) TITLE: Using ASVAB-5 to Predict Success in Secondary Schools.

Contractor: Psychometrics, Inc.

Purpose: Correlate common tests (in ASVAB-2 vs. ASVAB-5) against success in specific high school vocational courses for students tested as sophomores in SY 1974/75.

Status: Contract on schedule. Being modified to also use juniors tested on ASVAB-5 during SY 76/77.

(5) TITLE: Effect of Split-Day Testing on ASVAB Reliability.

Contractor: L. L. Streeter, Associates.

Purpose: Through actual administration, determine extent of impact of split-day testing on ASVAB reliabilities.

Status: 2,000 students tested, contractor proceeding with statistical analyses.

(6) TITLE: Predictive Validity of ASVAB-5 for Post-Secondary Schools.

Contractor: L. L. Streeter, Associates.

Purpose: Equate ASVAB-5 scores to specific course grades for students enrolled in post-secondary vocational/technical curricula.

Status: Contractor experiencing preliminary difficulty in obtaining college cooperation. Testing expected to begin in August 1977.

(7) TITLE: Validation of ASVAB-5 Against Civilian Job Performance Criteria.

Contractor: Associated Consultants International.

Purpose: To validate ASVAB-5 scores for 11th and 12th grade students tested during SY 1976-77 against job performance criteria once these students enter the labor market.

Status: Project on course; scheduled for completion in April 1978.

3. The next regular meeting of the ASVAB Working Group will be in conjunction with the annual conference of the Military Testing Association and will be held in San Antonio, Texas on 17 October 1977.

ATTENDEES  
ASVAB WORKING GROUP MEETING  
12-13 July 1977

| <u>NAME</u>         | <u>ORGANIZATION</u>                       | <u>TELEPHONE NR.</u> |
|---------------------|---|----------------------|
| FISCHL, Dr. M. A.   | Army Research Institute<br>Alexandria, VA | A: 284-8275          |
| FLYER, Dr. E.       | ODASD(MPP)<br>Wash DC                     | A: 22-79271          |
| GORMAN, Mr S.       | HQ MC (MPI-20)<br>Wash DC                 | A: 22-44166          |
| HODGES, Mr C. I.    | NPRDC<br>San Diego CA                     | A: 933-2181          |
| HOSHAW, Mr C. R.    | BUPERS (Pers 212b)<br>Wash DC             | A: 22-41613          |
| MARTIN, Lt T        | HQ USCG<br>Wash DC                        | C: 426-1389          |
| MATHEWS, Mr J. J.   | AFHRL/PES<br>Brooks AFB TX                | A: 240-3845          |
| MAUCK, Lt P.        | HQ MC (MRRE-2)<br>Wash DC                 | A: 22-42523          |
| O CONNOR, Lt Col T. | AFHRL/NA<br>Brooks AFB TX                 | A: 240-3605          |
| RUBERTON, Mr L. A.  | HQ DA (DAPE-MPE-CS)<br>Wash DC            | A: 22-50836          |
| SELLMAN, Maj W. S.  | AFMPC/DPMYP<br>Randolph AFB TX            | A: 487-2356          |
| SWANSON, Mr L.      | NPRDC<br>San Diego CA                     | A: 933-2181          |
| TUCKER, Lt C. W.    | BUPERS (Pers 551)<br>Wash DC              | A: 22-41370          |

| <u>NAME</u>         | <u>ORGANIZATION</u>              | <u>TELEPHONE NR.</u> |
|---------------------|----------------------------------|----------------------|
| VALENTINE, Dr L. D. | AFHRL/PES<br>Brooks AFB TX       | A: 240-3845          |
| WILFONG, Dr H. D.   | MEPCOM (MEPCT)<br>Ft Sheridan IL | A: 459-2366          |
| WISKOFF, Dr M. F.   | NPRDC<br>San Diego CA            | A: 933-6159          |

PROPOSED AGENDA  
ASVAB WORKING GROUP MEETING

1. Validation of ASVAB-6/7
2. Development of Common Composites
3. Implementation of ASVAB-5 High School Composites
4. Accuracy of ASVAB-6/7 Conversion Tables (Possible Restandardization)
6. Development of ASVAB-8/9/10
7. Reading Ability as an Input into the Selection and Classification Process
8. National Academy of Science Review of Aptitude Testing
9. H.R. 6776, Testing Reform Act of 1977
10. R&D of Computerized Measurement in Support of AFES Testing
11. Possible Revision of Enlistment Screening Test
12. ODASD(MPP) Adaptability Screening Task Force
13. Validation of the Motivational Attrition Prediction (MAP) Model
14. Status of ASVAB R&D Contracts

## MINUTES

## ASVAB WORKING GROUP MEETING

17 October 1977

1. On 17 October 1977, an ASVAB Working Group meeting was held in conjunction with the 19th Annual Conference of the Military Testing Association, San Antonio, Texas. Attendees are shown at Attachment 1.

2. The following topics were discussed.

a. Validation of ASVAB-6/7. Representatives from the three Service personnel research laboratories and HQ Marine Corps presented status reports on their validation analyses. Dr Lonnie Valentine, Air Force Human Resources Laboratory (AFHRL), indicated that validation was completed for 52 Air Force technical training courses involving over 15,000 students. The analyses were computed for all ASVAB subtests, Air Force composites, and both the old and new ASVAB-5 high school composites, with validities being reported for both sex and race. Validity coefficients ranged from uncorrected  $r$ s of .3 to .6 to corrected  $r$ s of .5 to .8. Mr Len Swanson, Navy Personnel Research and Development Center (NPRDC), also reported that Navy validities were becoming available and that as a predictor of success in Navy "A" schools ASVAB seems to work as well as the old Basic Test Battery (BTB). Navy validity coefficients observed were of the same ~~approximate~~ <sup>approximate</sup> magnitude as those found by the Air Force.

Dr Mike Fischl, Army Research Institute (ARI), and Mr Steve Gorman, HQ Marine Corps (HQ MC), both informed the Working Group that their validation efforts were continuing. Dr Fischl indicated that Army analyses for 110 military occupational specialties (MOSSs) would be completed in January 1978, while Mr Gorman noted that their results would be available in July 1978.

b. Development of Common Composites. Dr Lonnie Valentine presented a draft plan for the development of common classification composites. It involved each Service validating the other Services' composites against success in their technical training courses, developing new, more optimal composites for their Service, and then sharing all results with the other Services to determine if one set of composites which seem to work for everyone can be identified. After review and discussion, it was agreed that the Working Group would study Dr Valentine's draft plan, determine desired modifications to it and then reconvene in Washington DC on 8 November 1977 to finalize and coordinate the plan before its formal submission to Dr Eli S. Flyer, Office of the Deputy Assistant Secretary of Defense (Military Personnel Policy) (CDASD/MPP) on 15 November 1977. In addition, two basic premises concerning common composites were stated. Should a set of DOD-wide composites be implemented, it would be a Service prerogative to determine which ones of the set they would use for classification, and to establish their own cutoff scores for those composites employed.



c. Implementation of ASVAB-5 High School Composites. Dr Harry Wilfong, Military Enlistment Processing Command (MEPCOM), discussed the implementation of the new high school composites and their associated counseling materials within the DOD High School Testing Program. He indicated that no problems with the new composites had been encountered--almost as though counselors were unaware of the change. He did note, however, that some high schools (in Indiana and New Hampshire, in particular) have protested the modifications to the student results sheets, but overall it seems that the Cronbach Buros' Mental Measurement Yearbook draft review of ASVAB has had relatively little effect on testing in the high schools.

d. Accuracy of ASVAB-6/7 Conversion Tables (Possible Restandardization). At the 12-13 July 1977 Working Group meeting, Dr Mike Fischl indicated that there was still some ARI concern over the accuracy of the ASVAB-6/7 norms and suggested that the Working Group might consider restandardization. Mr Steve Gorman then noted that he had ASVAB-6/7 and Army Classification Battery-61 data on 3,000 Marine Corps recruits which he believed were normally distributed and free of any influence of test compromise. The Service scientists agreed to review the Marine Corps data and at the next Working Group meeting decide if they could be used in developing new norms. During the 17 October 1977 Working Group meeting, the Marine Corps data were discussed at length. Dr Fischl stated that new norms developed from that data would be "more difficult" and thus would effectively screen out more

applicants for Service than do the current norms. Dr Harry Wilfong then pointed out that the norming of the AFQT replacement forms was underway at the AFEES and suggested that updated AFQT norms could come from that study. It was then decided that the results of the AFQT standardization effort would be reviewed at the next meeting of the Working Group with a decision made at that time concerning the initiation of any new ASVAB-6/7 norming project.

e. Pre-ASVAB Study Materials. Mr Lou Ruberton, HQ Department of the Army (HQ DA) reported that the ASVAB Information Pamphlet has been coordinated by each of the Services and their recommended changes incorporated. The purpose of the pamphlet is for test orientation not "teaching the test." It should soon be printed and in the field for use by AFEES and recruiting personnel.

f. Development of ASVAB-8/9/10. During the 12-13 July 1977 meeting, the Working Group decided to postpone finalization of the plan to develop ASVAB-8/9/10 until validation of ASVAB-6/7 had been accomplished. It was felt that such validity information might provide insights concerning possible deletion of some of the current subtests. At the 17 October 1977 Working Group meeting, ~~the plan to develop ASVAB-8/9/10 until validation of ASVAB-6/7 had been accomplished.~~ *continuation of this strategy was indorsed.* Dr Mike Fischl did indicate that it might prove advantageous to include additional "less difficult" items in the ASVAB-8/9/10 development pool. Dr Malcolm Ree, AFHRL, agreed to procure these "easier" items and have them available by March 1978.

Further, discussion was held concerning the appropriateness of using a correction for guessing formulae with ASVAB. It was determined that such formulae typically do not change the rank ordering of examinees, are inappropriate for use with speeded subtests, and that the complexity of scoring ASVAB using such a formula would greatly outweigh any advantages MEPCOM might otherwise accrue from its use. Finally, the Working Group discussed contingency plans for finalizing and implementing ASVAB-8/9/10 should such a requirement become imminent. The members of the Working Group agreed to review the AFHRL technical report on ASVAB-8/9/10 to determine if those <sup>prototype</sup> forms could be used as are if ASVAB-6/7 had to be immediately replaced because of massive test compromise problems. This issue will be resolved at the next Working Group meeting.

g. Reading Ability as an Input into the Selection and Classification Process. Major Steve Sellman, Air Force Military Personnel Center (AFMPC) summarized recent initiatives within the Department of Defense (DOD) pertaining to the potential use of literacy as a screen for military enlistment. In particular, he described a joint DOD/Department of Labor (DOL) project in which applicants for military service who did not qualify on the ASVAB would be referred to a DOL agency, probably the Job Corps, for remedial basic skills training. Further, Major Sellman informed the Working Group of a DOD Steering Committee in this area which met at the Pentagon on 23 September 1977 to discuss the DOD/DOL effort. At that meeting, Mr Irv Greenberg, Deputy Assistant

Secretary of Defense (Program Management), asked that AFHRL, under the auspices of the ASVAB Working Group, develop a reading grade level conversion index from ASVAB. Thus, when an individual fails to qualify for Service, DOD could inform DOL of his/her approximate reading level to assist DOL in placing the individual in appropriate remedial reading training. A letter to the Assistant Service Secretaries for Manpower energizing this study was signed by the Principle Deputy Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) on 18 October 1977. There are no plans at this time to establish a minimum reading level for entry into the Services.

h. H.R. 6776, Testing Reform Act of 1977. Major Sellman informed the Working Group that based upon Service inputs, he had prepared a joint-Service position and forwarded it to Dr Eli S. Flyer, ODASD(MPP), who had in turn sent it to OSD General Counsel for interpretation. To date, a response from General Counsel has not been received. However, information concerning Congressional interest in the bill would suggest that its likelihood of passage during the present Congressional session is very remote. Further, Major Sellman has learned that Congressman Michael Harrington (D-Mass), author of the bill, has received considerable negative correspondence from the psychological community and that if he resubmits the bill next year it will be without provisions calling for disclosure of test answers to examinees 45 days after they tested.

i. National Academy of Science Review of Aptitude Testing.

Major Sellman discussed ODASD(MPP) plans to serve as one of the co-sponsors of the National Academy of Science (NAS) review of ability testing in American society. DOD's support of the review will be at the rate of \$50,000 per annum for two years. In return, NAS will establish a subpanel on military testing with DOD recommending scientists to serve on the panel. A candidate list of scientists including Dr Lloyd Humphreys, University of Illinois; Dr Hubert Brogden, Purdue University; Dr Leonard Gordon, State University of New York at Albany; and Dr Robert Guion, Bowling Green State University, has been submitted to NAS for consideration.

j. R&D of Computerized Measurement in Support of AFEES Test-

ing. Dr Malcolm Ree, AFHRL, presented a report on the status of the Air Force computerized testing prototype now on-line at the San Antonio AFEES. He shared some experiences concerning the collection of data and assured the Working Group that the "lessons learned" portion of the study is yielding invaluable information for the design of a future operational computerized measurement system. Mr Steve Gorman then updated the Working Group on the progress of the joint Marine Corps-NPRDC recruit testing project. Calibration of ASVAB-like items continues with the testing system scheduled for experimental implementation in early 1978. Finally, the Working Group was informed that the computerized testing subcommittee of the Joint Service Working Group on R&D Applications of Computer Technology to Military

Personnel Acquisitions will be held in San Diego in conjunction with the next meeting of the ASVAB Working Group.

k. Possible Revision of the Enlistment Screening Test. Mr Steve Gorman, HQ MC, pointed out that when the Enlistment Screening Test (EST) was developed by AFHRL, it was normed for an Air Force population with its maximum discrimination at the Air Force enlistment standard cutoff. Accordingly, the EST is not an optimum screening device for the other Services who use different enlistment standards. Mr Gorman suggested that AFHRL develop and norm new forms of the EST which would be appropriate for use by the other Services. Dr Lonnie Valentine said that AFHRL would consider the Marine Corps recommendation and report on its feasibility at the next Working Group meeting.

l. ODASD(MPP) Adaptability Screening Task Force. Major Steve Sellman summarized the results of the 9 September 1977 adaptability screening task force meeting. At that time, Dr Eli S. Flyer proposed that the Service personnel research laboratories combine the adaptability measures which had proved valid for their Services into a joint-Service instrument which could be field tested at the AFEES. The advantage of such an approach would be that the joint-Service instrument could be administered pre-enlistment and then used in making the enlistment decision. After considerable discussion, the Service scientists agreed that the necessary research on each Service specific instrument was not yet completed but should be finished by early 1978. Accordingly, this issue ~~will~~<sup>will</sup> again be considered at the next meeting of the ASVAB Working Group. At that time, Service validity

data<sup>will</sup> be reviewed and a decision made concerning the feasibility and desirability of developing and field testing a<sup>Joint-</sup>Service adaptability screening instrument. Further, it was agreed that each laboratory would send its adaptability researcher to the Working Group meeting.

m. Validation of the Motivational Attrition Prediction (MAP) Model. Major Steve Sellman presented a status report on this project. He indicated that the Military Service Inventory (MSI) had been administered to over 72,000 applicants for Service and the resulting answer sheets optically scored. Those data are now being combined with aptitude and biographical information in the preparation of an accessions file. Tracking of Service accessions for MAP validation will soon begin.

3. The next regular meeting of the ASVAB Working Group will be held at the Navy Personnel Research and Development Center, San Diego, California on 18-19 January 1978.

# ATTENDEES

## ASVAB WORKING GROUP MEETING

17 October 1977

| <u>NAME</u>         | <u>ORGANIZATION</u>                       | <u>TELEPHONE NR</u> |
|---------------------|---|---------------------|
| FISCHL, Dr M. A.    | Army Research Institute<br>Alexandria VA  | A: 284-8275         |
| GORMAN, Mr S.       | HQ Marine Corps (MPI-20)<br>Washington DC | A: 22-44166         |
| HOGGATT, Col R. S.  | AFHRL/NA<br>Brooks AFB TX                 | A: 240-3605         |
| HOSHAW, Mr. C. R.   | BUPERS (Pers 212b)<br>Washington DC       | A: 22-41614         |
| MASSAR, Mr R. S.    | MEPCOM(MEPCT)<br>Ft Sheridan IL           | A: 459-2865         |
| MATHEWS, Mr J. J.   | AFHRL/PES<br>Brooks AFB TX                | A: 240-3845         |
| REE, Dr M. J.       | AFHRL/PES<br>Brooks AFB TX                | A: 240-3845         |
| RUBERTON, Mr L. A.  | HQ DA(DAPE-MPE-CS)<br>Washington DC       | A: 22-50836         |
| SELLMAN, Maj W. S.  | AFMPC/DPMYP<br>Randolph AFB TX            | A: 487-2356         |
| SWANSON, Mr L.      | Navy Personnel R&D Center<br>San Diego CA | A: 933-3181         |
| TUCKER, Lt C. W.    | BUPERS (Pers 551)<br>Washington DC        | A: 22-41370         |
| VALENTINE, Dr L. D. | AFHRL/PES<br>Brooks AFB TX                | A: 240-3846         |
| WILFONG, Dr H. D.   | MEPCOM(MEPCT)<br>Ft Sheridan IL           | A: 459-2366         |
| WISKOFF, Dr M. F.   | Navy Personnel R&D Center<br>San Diego CA | A: 933-6159         |



**Research Memorandum 78-3**

**EVALUATION OF ALTERNATIVE APTITUDE AREA  
CONVERSION TABLES FOR USE  
WITH ASVAB 6 AND 7**

Leonard C. Seeley, Warren T. Matthews,

and

M. A. Fischl, Work Unit Leader

PERSONNEL ACCESSION AND UTILIZATION TECHNICAL AREA



U. S. Army

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March 1978

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## EVALUATION OF ALTERNATIVE APTITUDE AREA CONVERSION TABLES FOR USE WITH ASVAB 6 AND 7

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### INTRODUCTION

Applicants for military enlistment are administered an aptitude test battery at the Armed Forces Examining and Entrance Stations (AFEES) or at certain local sites under AFEES auspices. The battery, the Armed Services Vocational Aptitude Battery Form 6 or Form 7 (ASVAB 6/7), consists of 13 subtests which for Army purposes yield 16 scores which are in turn synthesized in various ways to form 11 composite scores. The composite scores are nine aptitude area scores used by the Army and Marine Corps for MOS assignment, a tenth used to identify candidates for certain supplementary tests, and the Armed Forces Qualification Test (AFQT), which is an overall indicator of eligibility.

These 11 composite scores serve two purposes in the Army: (a) to establish enlistment qualification, and (b) to establish eligibility for specific service schools. To qualify for enlistment an applicant with a high school diploma or general educational development (GED) diploma must attain a converted Army Standard score of 90 in at least one aptitude area, and an applicant without a high school diploma (or GED) must attain an Army Standard converted score of 90 in at least two areas. These requirements are in addition to attaining a qualifying AFQT percentile score. After qualifying for enlistment, applicants must qualify for schools, most of which have prerequisites of Army Standard converted scores in specific aptitude areas. Prerequisites vary, but most are in the score range of 85-110.

To calculate the composite scores, raw scores on specific subtests are added together, and the raw sum is referred to conversion tables which show the Army Standard Score or percentile equivalent. It is this converted score which is used for decision purposes in screening and assigning Army applicants.

The current operational conversion tables are based on results of an administration of the test battery to approximately 4,500 applicants for military service in September-October 1975. Air Force Human Resources Laboratory was executive agent for that research, with assistance provided by the laboratories of all of the other services.

An alternative set of ASVAB 6/7 conversion tables has subsequently been developed by the Center for Naval Analyses at the request of the Marine Corps.<sup>1</sup> These alternative conversion tables are based on scores of 3,134 Marine Corps recruits who were administered ASVAB 6/7 at the two Marine Corps Recruit Depots during the period December 1975 - February 1976.

#### OBJECTIVE

The objective of this analysis was to compare the operational ASVAB conversion tables with the experimental set proposed by the Marine Corps, in order to determine the impact of any possible change in conversion tables upon Army enlistment screening and school assignment.

#### METHOD

Complete sets of ASVAB 6/7 test scores were available on a sample of Army applicants tested as part of the original ASVAB 6/7 standardization in September-October 1975. Complete sets of scores on the 1973 Army Classification Battery (ACB-73) were also available for this sample. After removal of the small number of women applicants and all applicants who failed the then operational AFQT enlistment standard (16th percentile), 386 remained for analysis.

Complete sets of ASVAB 6/7 test scores were also available on a second sample of AFES applicants, tested in January 1976. With removal of women and AFQT failures, 657 cases remained for analysis in Sample 2.

After removal of AFQT failures (using the operational conversion tables), the scores in each sample were grouped into three subsamples (again on the basis of the operational conversion tables):

1. Those unquestionably not qualified for enlistment, i.e., no aptitude area score as high as 90;
2. Those unquestionably qualified for enlistment, i.e., two or more aptitude area scores of at least 90;
3. A marginal group who, depending upon their education, might or might not be qualified, i.e., only one aptitude area score of 90. This group was treated separately because educational information was not available.

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<sup>1</sup> Kohn, R. L., and Sims, W. H. An examination of the normalization of the Armed Services Vocational Aptitude Battery (ASVAB) Forms 6 and 7. Center for Naval Analyses (CNA76-3091), 27 July 1976.

## RESULTS

### ENLISTMENT ELIGIBILITY<sup>2</sup>

Table 1 shows the percentage of Army applicants in each of the two samples, sorted into the categories of unquestionably not qualified, unquestionably qualified, and marginally qualified (as defined above) when using, separately, both operational and experimental conversion tables.

The only apparent differences are very minor. In Sample 1 the experimental conversions would shift a few men from the marginally qualified to the clearly unqualified category, and in Sample 2 would result in a slight shift in the opposite direction—fewer unqualified, fewer marginally qualified, more men clearly qualified.

If these samples are representative, it seems fairly certain that these minute, compensatory changes are merely chance variation and that either set of aptitude area conversions would qualify about the same percentage of applicants for the Army.

### ADVANCED INDIVIDUAL TRAINING (AIT) SCHOOL ELIGIBILITY

For the analysis of school eligibility, the data were weighted to a rectangular distribution to conform to the ASVAB normalization procedure. That is, weights were assigned to the men (not scores) in each decile to insure that an equal number of (weighted) men would appear in each decile. This procedure is done before excluding records with AFQT scores lower than 16. Since the passing score of 16 falls within a decile and because there is rounding error, the number of men counted with two or more area aptitude scores of 90 varies slightly from the unweighted number shown in Table 1. The weighting makes the sample more representative of the population and thus the results of the analysis more meaningful.

Table 2 compares the two sets of conversions in terms of school eligibility. Specifically, since a score of 90 is the most common level of aptitude area school prerequisite, Table 2 shows the percentage of men who, after qualifying for the Army, attain a 90 or higher in any given aptitude area. Thus, of the 359 men in Sample 1 who qualified for the Army with two 90's, 307 (85.5%) of them scored 90 or above on the Combat (CO) composite using the operational conversion table, while only 271 (75.5%) of them would have received the same score if the experimental CO conversion table had been used.

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<sup>2</sup> Initial analyses of certain of the enlistment eligibility data were performed by Mr. Steven Gorman, Manpower Plans and Policy Division, Headquarters, USMC; and appreciation is expressed for that assistance.

Table 1

## COMPARISON OF ALTERNATIVE ASVAB 6/7 CONVERSION TABLES

| Number <sup>a</sup> of Area Aptitude<br>Scores $\geq$ 90 | Number of men                   |             |                                  |             |
|--|---------------------------------|-------------|----------------------------------|-------------|
|  | ASVAB Operational<br>Conversion |             | ASVAB Experimental<br>Conversion |             |
|  | Number                          | Percent     | Number                           | Percent     |
| Sample 1:  |                                 |             |                                  |             |
| Not qual. 0  | 6                               | 1.6         | 10                               | 2.6         |
| Marginal 1   | 26                              | 6.7         | 22                               | 5.7         |
| Qual. <u>2-9</u>   | <u>354</u>                      | <u>91.7</u> | <u>354</u>                       | <u>91.7</u> |
| all  | 386                             | 100.0       | 386                              | 100.0       |
| Sample 2:  |                                 |             |                                  |             |
| Not qual. 0  | 12                              | 1.8         | 10                               | 1.5         |
| Marginal 1   | 27                              | 4.1         | 23                               | 3.5         |
| Qual. <u>2-9</u>   | <u>618</u>                      | <u>94.1</u> | <u>624</u>                       | <u>95.0</u> |
| all  | 657                             | 100.0       | 657                              | 100.0       |

<sup>a</sup>General Technical (GT) area excluded.

Table 2

APPLICANTS SCORING 90 OR HIGHER ON AT LEAST 2 APTITUDE AREAS AND  
 ATTAINING A SCORE OF 90 OR HIGHER IN SPECIFIC APTITUDE AREAS

| Aptitude area                      | Sample 1a (N=359)             |      |                                |      | Sample 2a (N=629)             |      |                                |      |
|------------------------------------|-------------------------------|------|--------------------------------|------|-------------------------------|------|--------------------------------|------|
|                                    | Operational conversion tables |      | Experimental conversion tables |      | Operational conversion tables |      | Experimental conversion tables |      |
|                                    | Number                        | %    | Number                         | %    | Number                        | %    | Number                         | %    |
| Combat (CO)                        | 307                           | 85.5 | 271                            | 75.5 | 570                           | 90.6 | 518                            | 82.4 |
| Field Artillery (FA)               | 290                           | 80.8 | 278                            | 77.4 | 557                           | 88.6 | 533                            | 84.7 |
| Electronics (EL)                   | 313                           | 87.2 | 294                            | 81.9 | 582                           | 92.5 | 560                            | 89.0 |
| Operator & Food (OF)               | 303                           | 84.4 | 260                            | 72.4 | 555                           | 88.2 | 511                            | 81.2 |
| Surveillance & Communications (SC) | 305                           | 85.0 | 251                            | 69.9 | 552                           | 87.8 | 499                            | 79.3 |
| Mechanical Maintenance (MM)        | 303                           | 84.4 | 283                            | 78.8 | 565                           | 89.8 | 537                            | 85.4 |
| General Maintenance (GM)           | 321                           | 89.4 | 291                            | 81.1 | 593                           | 94.3 | 542                            | 86.2 |
| Clerical (CL)                      | 293                           | 81.6 | 283                            | 78.8 | 538                           | 85.5 | 517                            | 82.2 |
| Skilled Technical (ST)             | 310                           | 86.4 | 299                            | 83.3 | 566                           | 90.0 | 548                            | 87.1 |
| General Technical (GT)             | 289                           | 80.5 | 278                            | 77.4 | 552                           | 87.8 | 532                            | 84.6 |
|                                    |                               |      | Average                        | -25  |                               | -8%  | Average                        | -33  |
|                                    |                               |      |                                |      |                               |      |                                | -6%  |

Men with AFQT percentile score >15 and at least 2 aptitude area standard scores of 90.

Table 2 shows that considering all 10 aptitude areas, about the same percentage of applicants (on average, 6% and 8%) in the two samples currently attain a score of 90 and would not under the experimental conversions. The largest impact is in the SC area, where the experimental table shows losses of 10%-18% from what the operational table yields; second and third largest are in OF and CO, followed by GM.

Table 3 presents comparisons of the two sets of conversions by aptitude area, at score levels of 80, 90, 95, 100, and 110. Specifically, the table shows the consequence of applying the operational conversion and the experimental conversion, as well as the consequences of using the ACB-73 conversion for Sample 1. (ACB-73 scores were not available for the applicants in Sample 2.) For both samples, the ASVAB experimental conversion results in fewer school-qualified men than the ASVAB operational table in every area at almost every score level shown.

The findings with regard to the ACB-73 conversions are less clear. For five of the ten composite scores, the ACB-73 distribution resulted in even fewer qualified men than either the ASVAB experimental or operational conversion tables. For the other five areas, the differences between ACB-73 and the alternatives are very small, and mixed. However, as the ACB-73 was replaced in the AFEES by ASVAB 6 and 7 as of 1 January 1976, these comparisons are primarily of historic interest.

#### CONCLUSIONS

Based on these samples, very few successful Army applicants qualify for enlistment with only one AA score of 90 or higher. Even in the larger January 1976 sample, too few such men were present for statistical analysis.

Analysis of data for men with two or more AA scores of at least 90 shows that the percentage of men qualified for enlistment is independent of whether the ASVAB operational or experimental conversion table is used. That is, either set of conversions would qualify about the same percentage of Army applicants.

This is not the case when considering school eligibility. Specifically, the ASVAB experimental conversion is "harder," in that fewer men would qualify for each AIT school, on the average 6% to 8% fewer. Thus, acceptance by the Army of this experimental conversion as a replacement for the currently operational one would have a negative impact on the classification and school assignment of enlisted men.



Table 3

EFFECTS OF ALTERNATIVE NORMS ON SCHOOL-ELIGIBLE  
ARMY RECRUIT SAMPLES, BY APTITUDE AREAS  
(Page 1 of 5)

| <u>Aptitude Area: Combat (CO)</u>            |                      |        |                       |                   |                   |
|--|----------------------|--------|-----------------------|-------------------|-------------------|
| <u>Number of Recruits with Minimum Score</u> |                      |        |                       |                   |                   |
| Minimum<br>Score                             | ASVAB<br>Operational | ACB-73 | ASVAB<br>Experimental | Net<br>Difference | Percent<br>Change |
| Sample 1:<br>N=359                           | (1)                  | (2)    | (3)                   | (1)-(3)           | (1)-(3)           |
| 80   | 350                  | 336    | 307                   | -43               | -12               |
| 90   | 307                  | 302    | 271                   | -36               | -12               |
| 95   | 256                  | 266    | 222                   | -34               | -13               |
| 100  | 211                  | 209    | 168                   | -43               | -20               |
| 110  | 127                  | 124    | 99                    | -28               | -22               |
| Sample 2:<br>N=629                           |                      |        |                       |                   |                   |
| 80   | 615                  |        | 570                   | -45               | - 7               |
| 90   | 570                  |        | 518                   | -52               | - 9               |
| 95   | 504                  |        | 451                   | -53               | -11               |
| 100  | 438                  |        | 368                   | -70               | -16               |
| 110  | 299                  |        | 233                   | -66               | -22               |
| <u>Aptitude Area: Field Artillery (FA)</u>   |                      |        |                       |                   |                   |
| Sample 1:<br>N=359                           | (1)                  | (2)    | (3)                   | (1)-(3)           | (1)-(3)           |
| 80   | 339                  | 329    | 323                   | -16               | - 5               |
| 90   | 290                  | 284    | 278                   | -12               | - 4               |
| 95   | 249                  | 217    | 238                   | -11               | - 4               |
| 100  | 187                  | 164    | 187                   | 0                 | 0                 |
| 110  | 107                  | 84     | 107                   | 0                 | 0                 |
| Sample 2:<br>N=629                           |                      |        |                       |                   |                   |
| 80   | 603                  |        | 583                   | -20               | - 3               |
| 90   | 557                  |        | 533                   | -24               | - 4               |
| 95   | 498                  |        | 482                   | -16               | - 3               |
| 100  | 421                  |        | 421                   | 0                 | 0                 |
| 110  | 289                  |        | 289                   | 0                 | 0                 |

Table 3 (Page 2 of 5)

| <u>Aptitude Area: Electronics (EL)</u>                 |                   |                 |                    |                |                |
|--|-------------------|-----------------|--------------------|----------------|----------------|
| <u>Number of Recruits with Minimum Score</u>           |                   |                 |                    |                |                |
| Minimum Score  | ASVAB Operational | ACB-73 Obsolete | ASVAB Experimental | Net Difference | Percent Change |
| Sample 1:<br>N=359                                     | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 349               | 327             | 333                | -13            | - 4            |
| 90   | 313               | 285             | 294                | -19            | - 6            |
| 95   | 274               | 248             | 252                | -22            | - 8            |
| 100  | 221               | 193             | 201                | -20            | - 9            |
| 110  | 139               | 122             | 139                | 0              | 0              |
| Sample 2:<br>N=629                                     |                   |                 |                    |                |                |
| 80   | 619               |                 | 603                | -16            | - 3            |
| 90   | 582               |                 | 560                | -22            | - 4            |
| 95   | 524               |                 | 480                | -44            | - 8            |
| 100  | 441               |                 | 421                | -20            | - 5            |
| 110  | 322               |                 | 322                | 0              | 0              |
| <u>Aptitude Area: Operators and Food Handlers (OF)</u> |                   |                 |                    |                |                |
| Sample 1:<br>N=359                                     | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 335               | 298             | 314                | -21            | - 6            |
| 90   | 303               | 237             | 260                | -43            | -14            |
| 95   | 237               | 203             | 203                | 0              | 0              |
| 100  | 207               | 177             | 191                | -16            | - 8            |
| 110  | 136               | 113             | 122                | -14            | -10            |
| Sample 2:<br>N=629                                     |                   |                 |                    |                |                |
| 80   | 601               |                 | 575                | -26            | - 4            |
| 90   | 555               |                 | 511                | -44            | - 8            |
| 95   | 485               |                 | 485                | 0              | 0              |
| 100  | 419               |                 | 385                | -34            | - 8            |
| 110  | 305               |                 | 271                | -34            | -11            |

Table 3 (Page 3 of 5)

| <u>Aptitude Area: Surveillance &amp; Communications (SC)</u> |                   |                 |                    |                |                |
|--|-------------------|-----------------|--------------------|----------------|----------------|
| <u>Number of Recruits with Minimum Score</u>                 |                   |                 |                    |                |                |
| Minimum Score  | ASVAB Operational | ACB-73 Obsolete | ASVAB Experimental | Net Difference | Percent Change |
| Sample 1:<br>N=359   | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 354               | 335             | 321                | -33            | - 9            |
| 90   | 305               | 301             | 251                | -54            | -18            |
| 95   | 241               | 234             | 205                | -36            | -15            |
| 100  | 186               | 161             | 156                | -30            | -16            |
| 110  | 113               | 91              | 105                | - 8            | - 7            |
| Sample 2:<br>N=629   |                   |                 |                    |                |                |
| 80   | 618               |                 | 573                | -45            | - 7            |
| 90   | 552               |                 | 499                | -53            | -10            |
| 95   | 485               |                 | 439                | -46            | - 9            |
| 100  | 421               |                 | 353                | -68            | -16            |
| 110  | 262               |                 | 246                | -16            | - 6            |
| <u>Aptitude Area: Mechanical Maintenance (MM)</u>            |                   |                 |                    |                |                |
| Sample 1:<br>N=359   | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 339               | 324             | 317                | -22            | - 7            |
| 90   | 303               | 275             | 383                | -20            | - 7            |
| 95   | 268               | 236             | 245                | -23            | - 9            |
| 100  | 210               | 190             | 194                | -16            | - 8            |
| 110  | 130               | 112             | 126                | - 4            | - 3            |
| Sample 2:<br>N=629   |                   |                 |                    |                |                |
| 80   | 608               |                 | 581                | -27            | - 4            |
| 90   | 565               |                 | 537                | -28            | - 5            |
| 95   | 511               |                 | 485                | -26            | - 5            |
| 100  | 442               |                 | 412                | -30            | - 7            |
| 110  | 298               |                 | 277                | -21            | - 7            |

Table 3 (Page 4 of 5)

| <u>Aptitude Area: General Maintenance (GM)</u> |                   |                 |                    |                |                |
|--|-------------------|-----------------|--------------------|----------------|----------------|
| <u>Number of Recruits with Minimum Score</u>   |                   |                 |                    |                |                |
| Minimum Score                                  | ASVAB Operation 1 | ACB-73 Obsolete | ASVAB Experimental | Net Difference | Percent Change |
| Sample 1:<br>N=359                             | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 351               | 339             | 328                | -23            | - 7            |
| 90   | 321               | 292             | 291                | -30            | - 9            |
| 95   | 291               | 239             | 298                | -53            | -18            |
| 100  | 226               | 191             | 186                | -40            | -18            |
| 110  | 136               | 104             | 121                | -15            | -11            |
| Sample 2<br>N=629                              |                   |                 |                    |                |                |
| 80   | 619               |                 | 593                | -26            | - 4            |
| 90   | 583               |                 | 542                | -41            | - 7            |
| 95   | 542               |                 | 485                | -57            | -11            |
| 100  | 473               |                 | 403                | -70            | -15            |
| 110  | 316               |                 | 265                | -51            | -16            |
| <u>Aptitude Area: Clerical (CL)</u>            |                   |                 |                    |                |                |
| Sample 1:<br>N=359                             | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 347               | 352             | 337                | -10            | - 3            |
| 90   | 293               | 329             | 283                | -10            | - 3            |
| 95   | 249               | 265             | 249                | 0              | 0              |
| 100  | 201               | 208             | 179                | -22            | -11            |
| 110  | 114               | 115             | 105                | - 9            | - 8            |
| Sample 2<br>N=629                              |                   |                 |                    |                |                |
| 80   | 602               |                 | 585                | -17            | - 3            |
| 90   | 538               |                 | 517                | -21            | - 4            |
| 95   | 477               |                 | 477                | 0              | 0              |
| 100  | 401               |                 | 386                | -15            | - 4            |
| 110  | 281               |                 | 262                | -19            | - 7            |

Table 3 (Page 5 of 5)

| <u>Aptitude Area: Skilled Technical (ST)</u> |                   |                 |                    |                |                |
|--|-------------------|-----------------|--------------------|----------------|----------------|
| <u>Number of Recruits with Minimum Score</u> |                   |                 |                    |                |                |
| Minimum Score                                | ASVAB Operational | ACB-73 Obsolete | ASVAB Experimental | Net Difference | Percent Change |
| Sample 1:<br>N=359                           | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 348               | 333             | 329                | -19            | - 5            |
| 90   | 310               | 285             | 299                | -11            | - 4            |
| 95   | 381               | 235             | 263                | -18            | - 6            |
| 100  | 227               | 191             | 184                | -43            | -19            |
| 110  | 121               | 96              | 108                | -13            | -11            |
| Sample 2:<br>N=629                           |                   |                 |                    |                |                |
| 80   | 613               |                 | 600                | -13            | - 2            |
| 90   | 566               |                 | 548                | -18            | - 3            |
| 95   | 531               |                 | 506                | -25            | - 5            |
| 100  | 463               |                 | 415                | -48            | -10            |
| 110  | 305               |                 | 283                | -22            | - 7            |
| <u>Aptitude Area: General Technical (GT)</u> |                   |                 |                    |                |                |
| Sample 1:<br>N=359                           | (1)               | (2)             | (3)                | (1)-(3)        | (1)-(3)        |
| 80   | 353               | 344             | 328                | -25            | - 7            |
| 90   | 289               | 300             | 278                | -11            | - 4            |
| 95   | 244               | 232             | 228                | -16            | - 7            |
| 100  | 186               | 179             | 174                | -12            | - 6            |
| 110  | 106               | 94              | 102                | - 4            | - 4            |
| Sample 2:<br>N=629                           |                   |                 |                    |                |                |
| 80   | 618               |                 | 581                | -37            | - 6            |
| 90   | 552               |                 | 532                | -20            | - 4            |
| 95   | 493               |                 | 469                | -24            | - 5            |
| 100  | 397               |                 | 377                | -20            | - 5            |
| 110  | 282               |                 | 265                | -17            | - 6            |

## MINUTES

## ASVAB WORKING GROUP MEETING

18-19 January 1978

1. On 18-19 January 1978, an ASVAB Working Group meeting was held at the Navy Personnel Research and Development Center, San Diego, California. Attendees are shown at Attachment 1.

2. The following topics were discussed.

a. Validation of ASVAB-6/7. Representatives from the three Service personnel research laboratories and HQ Marine Corps presented status reports on their validation efforts. Dr Lonnie Valentine and Mr John Mathews, Air Force Human Resources Laboratory (AFHRL) indicated that as a routine part of the Air Force's studies, racial and sexual analyses were being computed. Preliminary results, to be published in an April 1978 AFHRL technical report, suggest that ASVAB-6/7 are valid for both racial minorities and women. Mr Len Swanson, Navy Personnel Research and Development Center (NPRDC), then reported that validities were now available on approximately 100 Navy "A" schools. In general, ASVAB seems to work as well as the old Basic Test Battery (BTB) with uncorrected validity coefficients ranging from .3 to .5. Mr Swanson also informed the Working Group that NPRDC was conducting racial subgroup analyses. Tables portraying overall ASVAB-6/7 Navy validities as well as subgroup coefficients will be ready for inspection in March 1978.

Dr Mike Fischl, Army Research Institute (ARI) described the status of Army validation. ASVAB scores have been matched against success in advanced individual training for some 25,000 recruits in over 110 military occupational specialties (MOSSs). Validity coefficients for the Army composites are being computed and will be ready by February 1978, while the predictive utility of the other Services' composites for Army courses will be available in March 1978. Finally, Lt Col Bill Osgood, HQ Marine Corps (HQ MC), stated that they were currently collecting training results on all recruits who entered the Marine Corps from March 1977 to the present. Using those results as criteria, validation is scheduled for completion in July 1978.

b. Development of ASVAB-8/9/10. During the 17 October 1977 meeting, the Working Group discussed contingency plans for finalizing and implementing ASVAB-8/9/10 should such a requirement become imminent. At that time, the members agreed to review the AFHRL technical report on ASVAB-8/9/10 to determine if those prototype forms could be used as are if ASVAB-6/7 had to be immediately replaced because of massive test compromise problems. At the 18-19 January 1978 Working Group meeting, Mr Lou Ruberton, HQ Department of the Army (HQ DA), and Mr Dick Hoshaw, Bureau of Naval Personnel (BUPERS) indicated a growing groundswell to replace ASVAB-6/7 with ASVAB-8/9/10. The Working Group agreed that ASVAB-8/9/10 are, in

fact, parallel forms of ASVAB-6/7 and could be used to replace them, if necessary. (It should be noted that all subtests would remain the same and in the same order within the battery.) Accordingly, the Working Group decided that AFHRL should prepare the camera ready masters of ASVAB-8/9/10 and that Maj Steve Sellman, Air Force Military Personnel Center (AFMPC) should print and distribute them to the Army Publications Distribution Center as soon as possible. In that regard, ASVAB-8/9/10 will not be immediately implemented as the production test but will instead be kept as backup to ASVAB-6/7 until such time as it is apparent that forms 6/7 have been totally compromised and completely lost their predictive utility. Further, Maj Sellman informed the Working Group that each Service must MIPR funds to him to cover the costs of printing: Army - \$30,400; Navy - \$19,000; Air Force - \$19,000; and Marine Corps - \$7,600. These monies will be used not only to print ASVAB-8/9/10 but also to print ASVAB worksheets and answer sheets. Finally, it was agreed that the printing of ASVAB-8/9/10 should in no way retard development of other new versions. Once validation results of ASVAB-6/7 are available for all Services (July 1978), the content of ASVAB-11/12/13 can be finalized and the test human engineered along the lines discussed at previous Working Group meetings. Before the next Working Group meeting, the members are to review the minutes of the 2-3 March 1977 meeting concerning test content and reaffirm that the item



characteristics agreed upon then are still appropriate for the next forms of the test. ASVAB-11/12/13 are now targeted for a 1980 implementation.

c. Development of ASVAB Reading Grade Level Index. The Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics) has tasked the ASVAB Working Group to evaluate the capability of ASVAB to determine the reading ability of applicants for enlistment into the military services. The study will collect data which will assist the Services in determining the advisability of screening out applicants with severe reading disabilities, the need for modifying in-Service literacy training programs, and the best way to identify military rejectees to be referred to the Departments of Labor; and Health, Education, and Welfare for remedial literacy training. Plans call for the administration of four commercially developed reading tests to 6,000 applicants for military service at 25 Armed Forces Examining and Entrance Stations (AFEES). From this testing, a reading grade index derived from ASVAB will be developed. Maj Steve Sellman, AFMPC, updated the Working Group on the actions taken to solicit the cooperation of the Service recruiting commands and the interservice recruitment committees as well as the guidance provided by the Military Enlistment Processing Command (MEPCOM) to the AFEES involved in the study. In addition, Mr John Mathews, AFHRL, informed that all testing materials had been mailed to the AFEES and testing was scheduled to begin on 5 February 1978. Members

of the Working Group who will monitor the first week's testing in selected AFEEs confirmed their availability for that duty as well as concurred in their assigned AFEEs. Finally, Dr Mike Fischl, ARI, reported on the results of a recent Army study conducted at Ft Dix. Approximately 600 Army recruits were administered a form of the Metropolitan Reading Achievement Test, and their scores were correlated with ASVAB results. Correlations (both corrected and uncorrected) between ASVAB subtests and the reading test are presented below.

Table 1. Correlations Between Selected ASVAB Subtests and Metropolitan Reading Achievement Test Scores

| <u>ASVAB Subtests</u>  | <u>Uncorrected <math>r_s</math></u> | <u>Corrected <math>r_s</math></u> |
|--|-------------------------------------|-----------------------------------|
| AFQT   | .73                                 | .85                               |
| Word Knowledge   | .74                                 | .86                               |
| Word Knowledge & Mathematics<br>Knowledge & Shop Information | .79                                 | .92                               |
| All Subtests   | .82                                 | .95                               |

The magnitude of these coefficients is most encouraging in that they suggest that the derivation of a fairly precise and stable ASVAB reading grade level index is a real possibility.

d. ODASD(MPP) Adaptability Screening Task Force. At the 17 October 1977 Working Group meeting, the feasibility and desirability of developing a joint-Service adaptability screening instrument was discussed. At that time, the Service

scientists indicated that the necessary research on each Service specific instrument was not yet complete enough for a final decision to be made. This issue was again discussed at the 18-19 January 1978 Working Group meeting with Service scientists summarizing the status of their studies. Based upon those reports, the Working Group concluded that the research was promising enough that development of a joint-Service device should be pursued. Accordingly, Dr Marty Wiskoff agreed that NPRDC would serve as the initial clearing-house for review of each Service instrument. The Service laboratories will send their adaptability screening instruments to NPRDC where potentially useful items will be identified. Following that, the Service scientists will meet to select items for inclusion in an experimental joint-Service instrument to be field tested at the AFEEs.

e. Accuracy of ASVAB-6/7 Conversion Tables (Possible Restandardization). Mr John Mathews, AFHRL, reported that the answer sheets for the AFQT replacement forms had just been received from MEPCOM. Consequently, he had not completed analysis nor had he developed new ASVAB-6/7 norms for consideration by the Working Group. Mr Mathews indicated that from those data he planned to develop new norms for all composites as well as the AFQT. These will be available for review at the next Working Group meeting.

f. Pre-ASVAB Study Materials. Mr Lou Ruberton, HQ DA, reported that the ASVAB Information Pamphlet has been

reviewed by each of the Services. Army, Navy, and Air Force coordinated on its development and use. Concurrence from the Marine Corps was not received, however, as the introduction section of the ASVAB Information Pamphlet implied that the ARCO "how to study" book was not unauthorized for ASVAB familiarization. The Marine Corps Recruiting Service is presently permitted to use ARCO as a study guide. The Marine Corps nonconcurrence, notwithstanding, the ASVAB Information Pamphlet will nevertheless be printed and made available to recruiters for ASVAB orientation. Mr Ruberton further indicated that he will soon be asking the Services for monies, via MIPR, to effect its printing and distribution.

g. R&D of Computerized Measurement in Support of AFEES Testing. Dr Jim McBride, NPRDC, summarized the status of ongoing computerized testing research in the Service laboratories. The AFHRL demonstration project in the San Antonio AFEES was interrupted for several months while the AFEES was relocated. It is about to resume and should be completed in several months. In addition, preliminary work has been accomplished on the joint HQ Marine Corps/NPRDC Marine recruit testing study. The computerized testing phase is scheduled to begin in March 1978 and will continue for about six months. Purposes of the effort include determining the feasibility of testing Marine recruits via computer terminals as well as the empirical confirmation of the theoretical advantages of adaptive testing.

Cooperation among the Services continues through the vehicle of the computerized adaptive testing subcommittee of the Joint Service Working Group of R&D Applications of Computer Technology to Military Personnel Acquisitions. AFHRL has been active in the development and calibration of ASVAB-like items usable for computerized testing. Further, they have made these items, their item analysis results, and basic research data available to the other Services. In the same vein, NPRDC has also offered verbal ability items, calibration results, response data and a major item calibration computer program to the Service laboratories. Moreover, the Office of Naval Research, the principal supporter of basic research in computerized testing, has arranged with its contracting scientists to make their research findings and item calibration computer programs available as well.

Finally, Major Brian Waters, AFHRL, demonstrated a second generation microterminal specifically designed for the administration of adaptive tests. He also offered to share this state-of-the-art technology.

h. Possible Revision of the Enlistment Screening Test.

At the 17 October 1977 Working Group meeting, Mr Steve Gorman, then with HQ Marine Corps, suggested that AFHRL develop new forms of the Enlistment Screening Test (EST) which would be appropriate for use by Services other than the Air Force. The original EST was normed for an Air Force population with its maximum discrimination at the Air Force enlistment standard

cutoff. Accordingly, it is not an optimum screening device for the other Services who use different enlistment standards. At the present meeting, Dr Lonnie Valentine, AFHRL, agreed that if the Services so desired, he would prepare experimental ESTs with items selected to discriminate at appropriate cutoff points. These experimental tests would then be given to the various Services for norming on their respective applicant pool. Each Service representative should be prepared to indicate by the next Working Group meeting, if they want AFHRL to develop Service specific forms of the EST.

i. Validation of the Motivational Attrition Prediction

(MAP) Model. Maj Steve Sellman, AFMPC, presented an update on the project. Letters requesting permission for the Air Force to obtain Service accessions and loss data from the Defense Manpower Data Center have been forwarded to the Services. Affirmative responses from the Army and Navy have been received. The next step is to match the Military Service Inventory (MSI) scores collected during the summer of 1977 on over 72,000 applicants for Service against aptitude and biographical information contained in the accessions files. Tracking of Service accessions for MAP validation will then begin.

j. Development of Common Composites. Dr Lloyd G. Humphreys, University of Illinois, has been retained by the Office of the Deputy Assistant Secretary of Defense (Military Personnel Policy) to provide psychometric consultation in the development of com-

mon classification composites. On 19 January 1978, Dr Humphreys met with the Working Group to discuss the project. Each Service scientist summarized his Service's selection and classification research program, with Dr Humphreys asking questions for specific clarification. At the conclusion of the session, it was agreed that the Services would make available all relevant technical reports and professional studies in this area. These reports will be sent to Maj Sellman who will collect them and forward them to Dr Humphreys.

3. The next regular meeting of the ASVAB Working Group will be held in the Pentagon, Washington DC, on 26-27 April 1978.

# ATTENDEES

## ASVAB WORKING GROUP MEETING

18-19 January 1978

| <u>NAME</u>       | <u>ORGANIZATION</u>                       | <u>TELEPHONE NR.</u> |
|-------------------|---|----------------------|
| ATWATER, Dr D.    | Navy Personnel R&D Center<br>San Diego CA | A: 933-2408          |
| CROCKETT, Mr S.   | Navy Personnel R&D Center<br>San Diego CA | A: 933-6721          |
| CURRAN, Maj C. R. | AFMPC/DPMYP<br>Randolph AFB TX            | A: 487-3167          |
| FISCHL, Dr M. A.  | Army Research Institute<br>Alexandria VA  | A: 284-8275          |
| FLYER, Dr E. S.   | ODASD(MPP)<br>Washington DC               | A: 227-9271          |
| GORMAN, Mr S.     | BUPERS(Pers-Or)<br>Washington DC          | A: 224-4404          |
| HODGES, Mr C.     | Navy Personnel R&D Center<br>San Diego CA | A: 933-2181          |
| HOSHAW, Mr C. R.  | BUPERS(Pers 212b)<br>Washington DC        | A: 224-1614          |
| MARTIN, Lt T.     | HQ Coast Guard<br>Washington DC           | FTS: 426-1388        |
| MASSAR, Mr R. S.  | MEPCOM(MEPCT)<br>Ft Sheridan IL           | A: 459-2865          |
| MATHEWS, Mr J. J. | AFHRL/PES<br>Brooks AFB TX                | A: 240-3845          |
| MAUCK, Lt P.      | HQ MC(MRRE-2)<br>Washington DC            | A: 224-2523          |
| McBRIDE, Dr J.    | Navy Personnel R&D Center<br>San Diego CA | A: 933-2176          |
| OSGOOD, Lt Col W. | HQ MC(MPI-20)<br>Washington DC            | A: 224-4165          |



|                     |   |               |
|---------------------|---|---------------|
| RUBERTON, Mr L. A.  | HQ DA(DAPE-MPE-CS)<br>Washington DC       | A: 225-0836   |
| SELLMAN, Maj W. S.  | AFMPC/DPMP<br>Randolph AFB TX             | A: 487-2356   |
| SWANSON, Mr L.      | Navy Personnel R&D Center<br>San Diego CA | A: 933-2181   |
| VALENTINE, Dr L. D. | AFHRL/PES<br>Brooks AFB TX                | A: 240-3845   |
| WARM, Lt T.         | Coast Guard Institute<br>Oklahoma City OK | FTS: 732-2417 |
| WATERS, Maj B. K.   | AFHRL/TTT<br>Lowry AFB CO                 | A: 926-4387   |
| WILFONG, Dr H. D.   | MEPCOM(MEPCT)<br>Ft Sheridan IL           | A: 459-2366   |
| WISKOFF, Dr M. F.   | Navy Personnel R&D Center<br>San Diego CA | A: 933-6159   |

**APPENDIX D**

**REFERENCES**

**RECENT NORMING DEVELOPMENTS**

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE MILITARY PERSONNEL CENTER  
RANDOLPH AIR FORCE BASE, TEXAS 78148



TO: DRMYP  
ATTN OF:

26 MAY 1978

SUBJECT: ASVAB Working Group Meeting

TO: Members, ASVAB Working Group

1. For your information, Attachment 1 contains the minutes of the ASVAB Working Group meeting, held at the Air Force Human Resources Laboratory, 1-3 May 1978.

2. The next meeting of the Working Group will be hosted by the Army Research Institute, 5001 Eisenhower Ave, Alexandria, VA, and is scheduled for 0900-1600, 28-29 Jun 1978. Request you provide representation from your office at the meeting. A tentative agenda for the meeting is at Attachment 2.

3. Lodging for those representatives coming from outside the Washington DC area will be at the Holiday Inn, 2460 Eisenhower Ave, Alexandria VA. Mrs Loudean Edmonds, ATV 284-8275, may be contacted for assistance with accommodations. Please contact her by 22 Jun 1978 to ensure room reservations.

FOR THE COMMANDER

*Wayne S. Sellman*  
WAYNE S. SELLMAN, Major, USAF  
Chief, Personnel Testing  
Chairman, Joint Service  
ASVAB Working Group

2 Atch  
1. ASVAB Minutes  
2. Tentative Agenda

**SUBJECT: ASVAB Working Group Meeting**

- The ASVAB Working Group met at the Air Force Human Resources Laboratory, Brooks AFB TX, 1-3 May 1978
  - attendees are shown at Attachment 1
- The following topics were discussed
- Validation of ASVAB-6/7
  - Mr. John Mathews, AFHRL, summarized results of ASVAB validation studies
    - ASVAB validated against performance in AF technical courses
      - corrected validity coefficients range from .4 to .8
      - ASVAB valid for both racial minorities and women
    - AF may need a new composite for the medical area
  - Dr. Miké Fischl, ARI, described Army validation efforts
    - ASVAB validated for 70 MOSs
      - corrected validity coefficients for Army composites range from .22 to .69
      - race and sex validity analysis underway
  - Dr. Jim McBride, NPRDC, described Navy validation results
    - validities computed for 47 A schools with final course grades as the criterion
      - average corrected validity coefficient is .5
      - ASVAB valid for minorities and women
  - Lt Col Bill Osgood, HQ Marine Corps, reported Marine Corps validation results will be available in Jul 1978
- Cronbach revisited
  - Maj Steve Sellman, AFMPC, summarized recent events associated with Cronbach review of ASVAB
    - indicated that Cronbach had written a proposed journal article and had sent it to himself and Dr. Eli Flyer, ODASD(MPP), for comment

- Service scientists had copy of article and would assist in preparing reply to Cronbach.
- reply to Cronbach to be forwarded by 5 May 1978
- Development of ASVAB-8/9/10
  - at 18-19 Jan 1978 ASVAB Working Group meeting, it was decided that ASVAB-8/9/10 would be finalized and printed for use as back-up to ASVAB-6/7
    - subsequently, ARI and NPRDC expressed concern that the new versions were acceptable replacements
    - Service scientists met at AFHRL on 20 Mar 1978 to discuss issue
      - decision made to use the versions to develop AFQT replacement forms, but not to print them for back-up use
  - at 1-3 May 1978 meeting, the Working Group decided to finalize development of ASVAB-8/9/10 to replace ASVAB-6/7
    - scientists to meet at AFHRL in late May to determine content and to select test items
    - ASVAB Working Group to meet 28-29 June to review and endorse work of scientists
    - ASVAB Steering Committee to be convened in Jul-Aug to approve battery content and to determine time frame for its implementation
- Length and testing time of ASVAB-5
  - Recruiting Command representatives indicated a two-hour test would facilitate their access into high schools
    - Dr. Harry Wilfong, MEPCOM, on the other hand, said that MEPCOM had no evidence of schools discontinuing the DOD High School Testing Program because the test was too long
  - Recruiting Command representatives were asked to provide information on the impact of test length by the next Working Group meeting
    - to determine actual numbers of schools which had dropped the program
- Development of ASVAB reading grade level index

- Mr. John Mathews informed that the administration of the commercial reading tests at the 25 AFEES was complete
- AFHRL is analyzing the resulting data and will prepare a report for forwarding to ODASD(MPP)
- members of the Working Group will receive copies of the report for their review
- ETS review of DOD selection and classification tests
  - following submission of Service papers on the validity of selection and classification tests to OSD General Counsel in Nov 1977, a contract was awarded to Educational Testing Service (ETS) to review Service testing programs and to prepare DOD guidelines on test development, validation, and use
  - ETS representatives met with Service and OASD(MRA&L) representatives on 25 Apr 1978
    - informed that Service testing programs looked good
    - distributed "strawman" guidelines and requested Service comments
  - subsequent meetings with ETS were planned
- Pre-ASVAB study materials
  - Maj Steve Sellman advised that the ASVAB Information Pamphlet was at the printers and would be distributed to all Services in Jul 1978
- Adaptability screening
  - Dr. Marty Wiskoff, NPRDC, informed the Working Group that he had received the adaptability screening instruments and their supporting data from all Services
  - he proposed a Jul 1978 meeting of Service scientists in San Diego to develop a joint service device and to begin planning for its validation
- Accuracy of ASVAB-6/7 conversion tables
  - Mr. John Mathews, AFHRL, reported that analysis was underway to determine norms for the AFQT replacement forms
    - these norms will provide information concerning the accuracy of the existing ASVAB-6/7 conversion tables
    - the norms will be available for review at the next Working Group meeting

- Development of new forms of AFQT

-- at the request of HQ Department of the Army, AFHRL is developing new forms of AFQT

--- Dr. Malcolm Ree, AFHRL, indicated that experimental versions should be prepared in approximately 60 days

---- will require norming through AFEES administration

- Possible revision of the Enlistment Screening Test (EST)

-- Services requested AFHRL to develop EST which would provide maximum discrimination of their enlistment cutoff points

--- Navy and Marine Corps at AFQT 21st percentile; Army at 16th percentile

-- AFHRL will develop tests and turn them over to Service laboratories for Service specific norming

- The next meeting of the ASVAB Working Group will be held at the Army Research Institute, Alexandria VA, on 28-29 Jun 1978

Maj W. S. Sellman  
AFMPC/DPMYP 3167  
26 May 1978

# ATTENDEES

## ASVAB WORKING GROUP MEETING

1 - 3 May 1978

| <u>NAME</u>         | <u>ORGANIZATION</u>                       | <u>TELEPHONE NR</u> |
|---------------------|---|---------------------|
| BAIRD, SGM W. R.    | Army Recruiting Command<br>Ft Sheridan IL | A: 459-3531         |
| BURT, Mr J. A.      | Coast Guard Institute<br>Oklahoma City OK | FTS: 686-2417       |
| DOUGHERTY, Mr J. E. | Navy Recruiting Command<br>Arlington VA   | A: 226-4891         |
| FISCHL, Dr M. A.    | Army Research Institute<br>Alexandria VA  | A: 284-8275         |
| FLYER, Dr E. S.     | ODASD(MPP)<br>Washington DC               | A: 227-9271         |
| GORMAN, Mr S.       | BUPERS (Pers-Or)<br>Washington DC         | A: 224-4404         |
| GRAHAM, Mr W.       | MEPCOM (MEPCT)<br>Ft Sheridan IL          | A: 459-2881         |
| HOGGATT, Col R. S.  | AFHRL/NA<br>Brooks AFB TX                 | A: 240-3605         |
| HOSHAW, Mr C. R.    | BUPERS (Pers 212b)<br>Washington DC       | A: 224-1614         |
| HOUTZ, Mr J. C.     | Army Recruiting Command<br>Ft Sheridan IL | A: 459-2675         |
| HYSTEN, Capt E. L.  | AF Recruiting Service<br>Randolph AFB TX  | A: 487-3860         |
| LEWIS, Dr J. R.     | Coast Guard Institute<br>Oklahoma City OK | FTS: 686-2417       |
| MARTIN, Dr A. J.    | ODASD(MPP)<br>Washington DC               | A: 225-5527         |
| MARTIN, Lt T.       | HQ Coast Guard<br>Washington DC           | FTS: 426-1388       |
| MATHEWS, Mr J. J.   | AFHRL/PES<br>Brooks AFB TX                | A: 240-3846         |



| <u>NAME</u>           | <u>ORGANIZATION</u>                       | <u>TELEPHONE NR</u> |
|-----------------------|---|---------------------|
| McBRIDE, Dr J. R.     | Navy Personnel R&D Center<br>San Diego CA | A: 933-2176         |
| MONTGOMERY, Maj W. B. | Army Recruiting Command<br>Ft Sheridan IL | A: 459-2644         |
| OSGOOD, Lt Col W. H.  | HQ Marine Corps<br>Washington DC          | A: 224-4165         |
| REE, Dr M. J.         | AFHRL/PES<br>Brooks AFB TX                | A: 240-3846         |
| RICH, TSgt C.A.       | AF Recruiting Service<br>Randolph AFB TX  | A: 487-3110         |
| RODEEN, Col J.        | MEPCOM (MEPCT)<br>Ft Sheridan IL          | A: 459-2366         |
| RUBERTON, Mr L. A.    | HQ DA(DAPE-MPE-CS)<br>Washington DC       | A: 225-0836         |
| SELLMAN, Maj W. S.    | AFMPC/DPMYP<br>Randolph AFB TX            | A: 487-2356         |
| THOMAS, Lt R. B.      | Navy Recruiting Command<br>Arlington VA   | A: 226-4187         |
| TUCKER, Lt C. W.      | BUPERS (Pers 551)<br>Washington DC        | A: 224-1370         |
| VALENTINE, Dr L. D.   | AFHRL/PES<br>Brooks AFB TX                | A: 240-3846         |
| WILFONG, Dr H. D.     | MEPCOM (MEPCT)<br>Ft Sheridan IL          | A: 459-2811         |
| WISKOFF, Dr M. F.     | Navy Personnel R&D Center<br>San Diego CA | A: 933-2176         |

TENTATIVE AGENDA  
ASVAB WORKING GROUP MEETING  
28-29 JUNE 1978

1. Validation of ASVAB-6/7
2. Still More Cronbach
3. Development of ASVAB-8/9/10
4. Length and Testing Time of ASVAB-5
5. Development of ASVAB Reading Grade Level Index
6. ETS Review of DOD Selection and Classification Tests
7. Adaptability Screening
8. Development of New Forms of AFQT
9. Accuracy of ASVAB-6/7 Conversion Tables
10. Status of ASVAB R&D Contracts

DEPARTMENT OF THE AIR FORCE  
AIR FORCE HUMAN RESOURCES LABORATORY (AFSC)  
LHOODE AIR FORCE BASE, TEXAS 76735

2



MEMO TO  
ATTN: PE

8 AUG 1978

SUBJECT: Draft of ASVAB Working Group Meeting Minutes

TO: See Distribution List

The draft of the minutes of the ASVAB Working Group Meeting held on 28-29 June 1978 is at Attachment 1 for your review. Any changes or additions to the minutes should be sent to me.

*Lonnie D. Valentine, Jr.*

LONNIE D. VALENTINE, Jr.  
Chief, Selection and  
Classification Branch  
Personnel Research Division

- 2 Atch  
1. Draft Minutes  
2. Distribution List

## MINUTES

### ASVAB WORKING GROUP MEETING

28-29 June 1978

1. On 28-29 June 1978, an ASVAB Working Group meeting was held at the Army Research Institute, 5001 Eisenhower Avenue, Alexandria, Va. Attendees are shown at attachment 1.

2. The following topics were discussed:

a. Working Group Chairmanship. Major Steve Sellman is being reassigned from AFMPC to OSD. His replacement (1 August) in AFMPC/DPMP will be L/C Wayne Shore. With Major Sellman's departure, Dr. Eli Flyer will act as interim working group chairman, with a decision about permanent chairmanship to be made later.

b. Steering Committee. The ASVAB Steering Committee has not met since August 1975. It is to be reactivated at a meeting in early August 1978. The Steering Committee should be composed of a Flag Officer from each of the service DP shops plus a chairman from OSD. Service Policy representatives to the working group should identify appropriate Steering Committee member for their service to Dr. Flyer. It is anticipated that the Steering Committee will consider, and provide policy in, such points as battery length, production schedules, approval of lab plans for revised content and length, extent to which production and High School version are to be parallel, etc. These are particularly critical concerns, especially in light of outside criticisms of the ASVAB. It is anticipated that the service policy representatives will provide input to the Steering Committee through their policy representatives on the working group.

c. Validation of ASVAB 6/7. Each of the services has given a report on current status of their ASVAB 6/7 validation studies. Air Force and Navy studies are essentially complete. Summary data on Marine Corps validations to date were provided to working group members. Essentially, these consisted of validations of all service composite sets; regressions, etc. will be completed and reported later this summer. Army validation studies will be completed by 1979; Army Race/Sex analyses will be accomplished by the end of July; composite validities for other services composites, and high school composites, and proposed "best" alternative composites will be reported about 45 days later. Cross validations of New Army Composites will occur in early CY 1979.

d. Still More Cronbach. It was reported that at a Chicago meeting of Army Educational Specialists and Recruiters, General Forrester indicated that he wanted an article in the Army Recruiter Magazine dealing with Cronbach's criticisms of the high school program; so far, this has been through four drafts.

e. Development of ASVAB 8/9/10. Plans arrived at by Lab representatives for ASVAB revision were reviewed. Essentially, plans are to lengthen AFQT segments of the battery to enhance reliability, and to eliminate or consolidate some other portions. Outline of the plan is contained in notes on the Lab meeting. \*

f. Length of Testing time of ASVAB 5. There continues to be pressure from both the recruiting services and MEPCOM for a "shorter" high school test. This in spite of criticisms from people like Cronbach about inadequate reliability with shorter tests.

g. Development of ASVAB Reading Grade Level Index. John Mathews reported on status of the reading studies. There is a fairly high correlation between ASVAB GT and reading test scores (in fact, higher than among some of the reading

tests). Conversion tables will be prepared which will allow correlation of reading level from GT.

h. ETS Review of DOD Selection and Classification Tests. It was reported that an ETS draft of standards for DOD tests has been prepared, and is being sent to the services for comment before being placed in final form.

i. Adaptability Screening. Sub-committee working on a joint adaptability screening instrument will meet at NPRDC in September to work on consolidation of the several service instruments into a single experimental test.

j. Development of New Forms of AFQT. John Mathews reported on renorming of AFQT's 7a and 8a with deletion of tools. Pending service approval, these instruments are available for AFQT verification use. Dr. Valentine provided Lab representatives with review copies of two proposed replacement AFQTs (for substitution into ASVAB 6 or 7 which were constructed by Dr. Ree from earlier proposed ASVAB 8, 9 and 10 forms. The Labs were asked to indicate acceptability of these versions.

k. Accuracy of ASVAB 6/7 Conversion Tables. John Mathews reported on, and provided data on a renorming of ASVAB 6/7 AFQTs accomplished as a by-product of AFQT 7a and 8a renorming efforts; Bill Simms of CNA reported on renorming of ASVAB 6/7 from Marine Corps data collected at reception centers. There are discrepancies between these sets of data and current norms, Lab Representatives were asked to study and evaluate these reports so that a decision about norms may be made later. Mr. Masser from DECOM sent along note requesting substitution of norms be based on SY 77-78 cases for current ASVAB 5

# ASVAB CONFERENCE ATTENDEES

28-29 June 1978

| <u>Name</u>          | <u>Organization</u>  | <u>AUTOVON Number</u>          |
|----------------------|--|--------------------------------|
| Tom Warm             | U.S. Coast Guard Institute   | FTS 732-2417                   |
| Everett Hysten, Capt | HQ USAF Recruiting Service<br>Randolph AFB TX                            | 487-3110/5860                  |
| Rick Yekovich        | ARI, Alexandria VA   | 8-284-8694                     |
| Wayne Shore, Lt Col  | Air Force Military Personnel Center<br>Randolph AFB TX (Effective 1 Aug) | 487-3167                       |
| John Mathews         | AFHRL/PES, San Antonio TX  | 240-3845                       |
| Lonnie Valentine     | AFHRL/PES, San Antonio TX  | 240-3845                       |
| Eli Flyer            | OASD(MPA&L)  | 227-9271                       |
| C. R. Hoshaw         | BUPERS-212b  | 244-1613                       |
| W. W. Graham         | MEPCOM   | 459-2881                       |
| J. R. McBride        | NPRDC Code 310, San Diego CA 92119                                       | 933-2176                       |
| W. S. Sellman, Maj   | AFMPC/DPMYP, Randolph AFB TX   | 487-2356                       |
| Robert Ross          | ARI  | 8-284-8275                     |
| Bill Csgood, Lt Col  | HQ Marine Corps (MPI-20) Wash DC<br>20380                                |                                |
| Thomas Martin, LTJG  | U.S. Coast Guard   | FTS (202) 426-1339             |
| L. Robertson         | DAPE-MPE-CS HQ DA  | 8-225-0836                     |
| Steve Gorman         | Navy Eupers (Pers-Or)  | 224-4404<br>Comm. 703-524/9400 |
| Bill Sims            | Center for Naval Analyses  |                                |
| James Rodden, Col    | Hq MEPCOM  | 459-2366                       |
| John Houtz           | Hq USAREC  | 459-2675                       |
| C. W. Tucker, Lt     | BUPERS (PER 5551)  | 224-1370                       |
| K. White, Lt         | BUPERS (PER 5551)  | 224-1370                       |
| Len Seeley           | US ARI   | 284-8275                       |
| Patrice Mauck, Lt    | USMC Recruiting  | AUV 224-2523<br>694-2523       |

# DISTRIBUTION LIST

## NAME

## ORGANIZATION

Tom Warm  
Everett Hysten, Capt

Rick Yekovich  
Wayne Shore, Lt Col

Eli Flyer  
C. R. Hoshaw  
W. W. Graham  
J. R. McBride  
W. S. Sellman, Maj  
Robert Ross

Bill Osgood, Lt Col  
Thomas Martin, LTJG

L. Ruberton  
Steve Gorman

Bill Sims  
James Rodeen, Col

John Houtz  
C. W. Tucker, Lt

K. White, Lt  
Len Seeley

Patrice Mauck, Lt

U.S. Coast Guard Institute  
HQ USAF Recruiting Service  
Randolph AFB TX

ARI, Alexandria VA  
Air Force Military Personnel Center  
Randolph AFB TX

OASD (MRA&L

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NPRDC Code 310, San Diego CA 92119

AFMPC/MPCYP, Randolph AFB TX 78148

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HQ Marine Corps (MPI-20) Wash DC 20380

U. S. Coast Guard

- DAPE-MPE-CS HQ DA

Navy BUPERS (Pers-Or

Center for Naval Analyses

HQ MEPCOM

HQ USAREC

BUPERS (PER 5551)

BUPERS (PER 5551)

US ARI

USMC Recruiting



5 6  
DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS, AIR FORCE PERSONNEL TEST BRANCH  
RANDOLPH AIR FORCE BASE TEXAS 79128



MPCYPT

27 Nov 78

ASVAB Working Group Meeting

Members, ASVAB Working Group

Attached are the minutes of the 31 Oct - 1 Nov 78 Working Group meeting. Questions or comments should be directed to Lt Col Shore, AUTOVON 487-3167/2356.

FOR THE COMMANDER

*C. Wayne Shore*

C. WAYNE SHORE, Lt. Col., USAF  
Chief, Personnel Testing Branch

1 Atch  
ASVAB Minutes

## SUMMARY

### ASVAB WORKING GROUP MEETING

31 Oct - 1 Nov 1978

1. On 31 Oct - 1 Nov 78 an ASVAB Working Group meeting was held at the site of the Military Testing Association Convention, Oklahoma City, OK. A list of attendees is attached.

2. The following issues were discussed:

a. Content of ASVAB 8, 9, & 10. Agreement was reached that the content of ASVAB 8, 9, & 10 would differ from that of ASVAB 6/7 in the following ways:

- 1) Attention to Detail, General Information, and Space Perception will be omitted.
- 2) Sentence Completion, Reading Comprehension, and Coding Speed will be added.
- 3) The AFQT will consist of Verbal (Word Knowledge, Sentence Completion, and Reading Comprehension) and Quantitative (Arithmetic Reasoning and Numerical Operations). It was stated that NO does not discriminate against women or minorities.

b. Other agreements regarding 8, 9, & 10 were:

- 1) Analyses will be done by Bob Boldt by Feb 79 to determine feasibility of including Electronics Information, Reading Comprehension, the Army Classification Inventory, and VOICE.
- 2) If used, Math Knowledge would have 25 items,

Pattern Comprehension - 20 items, and ACI - about 65 items.

3) Technical Information will have 30 items.

4) The issue of "p" values will be resolved after Bob Boldt has had a chance to make recommendations after his review of information functions to be developed by Jim McBride.

5) Norming of 8, 9, & 10. The importance of following a first-rate norming procedure was stressed. Eli Flyer said that contract money should be available for norming. Bill Graham said that MEPCOM was already developing plans for norming 8, 9, & 10. A meeting in the near future with Lonnie Valentine, Bill Graham, and Bill Sims to complete norming plans was recommended.

c. Use of R&S as substitute AFQTs. Although there were reservations expressed by all services concerning the equivalence of R&S to 6/7, it was decided that the requirement for the tests outweighed other considerations. Bill Sims will gather data on R&S, using Marine recruits, to verify R&S equivalence with 6/7.

3. It was determined that the next Working Group meeting should take place subsequent to the completion of Bob Boldt's analysis in February 1979.

# ATTENDEES

## ASVAB WORKING GROUP MEETING

31 Oct - 1 Nov 1978

| <u>NAME</u>        | <u>ORGANIZATION</u>                    | <u>TELEPHONE NR.</u> |
|--------------------|--|----------------------|
| BOLDT, Dr B.       | ETS<br>Princeton, N.J.                 | (609) 921-9000 E/284 |
| FISCHL, Dr M.A.    | ARI<br>Alexandria, VA                  | A: 284-8275          |
| FLYER, Dr E.S.     | OASD (M,RA&L)<br>Washington DC         | A: 227-9271          |
| GRAHAM, Dr W.      | MEPCOM (MEPCT)<br>Ft Sheridan IL       | A: 459-2881          |
| HOSHAW, Mr C.R.    | BUPERS (Pers-Or)<br>Washington DC      | A: 224-1613/14       |
| HOUTZ, Mr J.       | USAREC                                 | A: 459-2675          |
| KEETCH, Lt Col E.  | AFRS<br>Randolph AFB TX                | A: 487-3511          |
| MARTIN, Lt T. J.   | HQ Coast Guard<br>Washington DC        | FTS 426-1389         |
| MASSEY, Capt R.    | AFHRL/PES<br>Brooks AFB TX             | A: 240-3845          |
| RUX, Capt G.       | MEPCOM (MEPCI)<br>Ft Sheridan IL       | A: 459-3602          |
| SIMS, Dr B.        | Ctr for Naval Analyses<br>Arlington VA | A: 225-9241          |
| SHORE, Lt Col C.W. | AFMPC/MPCYP<br>Randolph AFB TX         | A: 487-3167          |
| VALENTINE, Dr L.D. | AFHRL/PES<br>Brooks AFB TX             | A: 240-3845          |
| WASH, Lt T.A.      | Coast Guard Inst<br>Oklahoma City OK   | FTS 222-2111         |
| WHITE, Lt K.       | BUPERS (Pers-551)<br>Washington DC     | A: 224-1370          |
| WISKOFF, Dr M.E.   | NPRDC<br>San Diego CA                  | A: 933-6159          |



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

January 24, 1979

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

(Military Personnel Policy)

Dr. William H. Sims  
Center for Naval Analyses  
1401 Wilson Boulevard  
Arlington, Virginia 22209

Dear Bill:

Your report on the norming of AFQT Forms 6 and 7 concluded that the norming adjustments made in 1976 were not too accurate, and a higher percentage of both high and low aptitude applicants is actually being enlisted by the Services.

Given the implications of your findings, we would like you to replicate your study as soon as possible to see if the same results are obtained. The norming you are conducting of AFQT Forms R and S should be expanded, if at all possible, to include this replication.

We would also appreciate a briefing on findings from your current report to the ASVAB Steering Committee at its next meeting. We will call LtCol Osgood so that the necessary arrangements can be made for both matters.

Sincerely,

A handwritten signature in cursive script, appearing to read "Eli S. Flyer".

Eli S. Flyer  
Accession and Retention  
Programs

(9)



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

18 May 1979

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

Military Personnel Policy)

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE ARMY (M&RA)  
ASSISTANT SECRETARY OF THE NAVY (MRA&L)  
ASSISTANT SECRETARY OF THE AIR FORCE (MRA&L)

SUBJECT: Armed Forces Qualification Test Norming Study

The Armed Forces Qualification Test (AFQT) has been the single common mental test for DoD enlisted selection since 1951. Percentile distributions--norms--were based upon the World War II mobilization population. Although there have been many successor versions of the test, AFQT scores continue to be normed back to the earliest version.

During 1958, supplementary Service aptitude tests were also authorized for selection. AFQT continued to be administered to retain a common test score for accessions that could be tied to previous norms. Starting in 1972, however, the Services were permitted by OSD to discontinue use of a common test to determine AFQT. To retain some continuity with the past, the Services were asked to generate AFQT surrogate scores from the Service test batteries being administered to applicants.

The Services were directed during 1974 to develop a common test battery for operational use which would include an AFQT. In 1976, all the Services began to use ASVAB (Forms 5, 6, and 7) as the single DoD selection and classification test. Norming for the AFQT component of the ASVAB continued to track-back to the World War II mobilization population.

Shortly after implementation, there were some indications that the norming of the AFQT was not sufficiently accurate at the upper ability levels. Based upon studies performed by researchers from each Service, new conversion tables were adopted during 1976, which increased the number of AFQT items that had to be passed to qualify at the AFQT I and II levels. The Service researchers recommended a minor change in the conversion tables at the lower ability levels which would make the test slightly easier. Service research laboratory representatives agreed to closely monitor the norms and report any observed irregularities in mental category distributions.

The Center for Naval Analysis in July 1978, published a report based upon Marine Corps enlistees in boot camp. The report indicated that the renorming, which occurred during 1976, had overcorrected at the upper ability levels. In addition, it was reported that norming was

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inaccurate at the lower ability levels--that accessions at these levels were somewhat lower in AFQT than was being shown by the operational conversion tables.

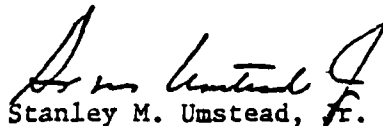
At the request of the ASVAB Steering Committee which I chair, the Center for Naval Analysis conducted a replication study, also based upon Marine Corps recruits, which was reported at the Committee meeting held on 7 May 1979. The results from this study were interpreted to mean that the norms were apparently correct at the upper ability levels but substantially inaccurate at the lower ability levels. There are reasons, however, to question the validity of this latter finding since the data were collected on a restricted sample--enlistees who passed not only an AFQT minimum but other aptitude minimums as well.

The Steering Committee has directed that a major study be undertaken immediately, which would involve applicants for all the Services, to determine the accuracy of current AFQT norms and to take appropriate action if the norms are found to be incorrect. The attached plan has been developed and reviewed by Service researchers for this purpose and has been approved by the ASVAB Steering Committee for implementation.

This norming study will require an additional hour of testing time at the AFEES for a four week period. Additionally, to meet the study's design specifications, introduction of two new AFQT replacement forms will have to be delayed for a short period of time.

In my memorandum of 15 February 1979 to you, your assistance was requested in helping the Air Force collect data at the AFEES to develop ASVAB replacement forms. This effort, while still critically needed, should be delayed until data for the norming study have been collected. At that point the Air Force data collection should be given the highest priority. A schedule for this data collection should be provided to the Air Force by MEPCOM within the next thirty days.

It is realized that the major burden of this new requirement will fall upon MEPCOM, the Services' recruiting commands, and the Army Research Institute which will conduct the analysis of the data from this study. The full cooperation of all those involved in this important undertaking is essential and appreciated.

  
Stanley M. Umstead, Jr.  
Major General, USAF  
Deputy Assistant Secretary

Attachment

## AFQT Norming Study Plan

Title: Norming of the ASVAB

Purposes:

1. Estimate effects of alternative norms on personnel supply.
2. Evaluate accuracy of ASVAB AFQT 6 and 7 norms.

Procedures:

- I. Estimate effects of alternative norms on personnel supply.

A. Variables

1. Reference test is AFQT 7A.
2. Operational AFQT and subtest scores from ASVAB 6 and 7.
3. Background data:
  - a. Sex - male, female.
  - b. Education - HSG, NMSG.
  - c. Race - Black, White, Other.
  - d. Branch of Service - AF, Army, Marines, Navy.
  - e. SSN.
  - f. Primary Language - Spanish, English, Other.

- B. Data Collection Procedures - Two alternative data collection procedures are described in preferred order:

1. Sample is all persons processed at all MET sites, except Office of Personnel Management sites, and at all AFEES, except DEPs during one week period of 11 - 15 June 1979. The ordering of administering AFQT 7A and 6 or 7 is as follows:
  - a. On Monday and Tuesday, administer ASVAB 6 or 7 before administering AFQT 7A.
  - b. On Wednesday thru Friday, administer AFQT 7A before administering ASVAB 6 or 7.
2. Sample is all persons processed at all AFEES except DEPs during the two week period 11 - 22 June 1979. The ordering of administering AFQT 7A and 6 or 7 is as follows:



- a. During week one, administer ASVAB 6 or 7 before administering AFQT 7A.
- b. During week two, administer AFQT 7A before administering ASVAB 6 or 7.
- c. For persons tested with ASVAB at site other than AFEES, all persons administered AFQT 7A at a convenient time at the AFEES.

C. Analysis:

- 1. Collection and scoring of Answer Sheets (A/S).
  - a. AFEES to forward all AFQT 7A A/S to AFHRL after each week of testing.
  - b. AFHRL edits and scores AFQT 7A answer sheets and forwards answer sheets and score data on tape to ARI.
  - c. MEPCOM provides ARI with automated applicant records including ASVAB 6 and 7 test scores.
  - d. ARI spot checks scoring of AFQT 7A A/S and collates AFQT 7A scores, ASVAB 6 and 7 scores, and background information.
- 2. Normalization of ASVAB 6, 7 with AFQT 7A as reference test.
  - a. Conduct equating separately for males and females.
  - b. Obtain distribution of AFQT 7A percentile scores and of ASVAB 6 and 7 AFQT percentile scores, for total samples of males and females (separately for each sex).
  - c. For each AFQT 7A decile, weight number of cases to obtain a stratified sample from the AFQT 7A reference population.
  - d. Using standard computer program on the stratified sample, convert ASVAB 6 and 7 raw scores to percentile scores.
  - e. Obtain mean, SD, and correlation of AFQT 7A, ASVAB AFQT 6 and 7, and ASVAB pseudo AFQT.
  - f. Prepare conversion tables and conversion charts for ASVAB AFQT raw scores to percentile scores.
  - g. Compare conversions from sample of applicants to operational norms and to prior research results. Compare conversions for males and females.

### 3. Estimate flow of accessions

- a. Compute aptitude area scores from each service for all applicants, using operational norms to compute aptitude area scores.
- b. Apply selection standards to sample, categorized by differential selection standards.
- c. For each subgroup, using new ASVAB AFQT conversion tables obtained on applicant sample and operational ASVAB AFQT conversion tables, compute number accepted and rejected under each set of norms. The results would be shown separately for each AFQT decile, as appropriate. Separate tables will be prepared for females using male and female conversion tables. An illustration of how the results will be presented is shown below:

Male, Non High School Graduates, Navy (Both race )

|                                |       | Operational AFQT Score |       |       |     |        |       |       |       |     |  |
|--------------------------------|-------|------------------------|-------|-------|-----|--------|-------|-------|-------|-----|--|
|                                |       | Accept                 |       |       |     | Reject |       |       |       |     |  |
|                                |       | 11-20                  | 21-30 | 31-40 | 41+ | 0-10   | 11-20 | 21-30 | 31-40 | 41+ |  |
| New<br>AFQT<br>Accept<br>Score | 11-20 |                        |       |       |     |        |       |       |       |     |  |
|                                | 21-30 |                        |       |       |     |        |       |       |       |     |  |
|                                | 31-40 |                        |       |       |     |        |       |       |       |     |  |
|                                | 41+   |                        |       |       |     |        |       |       |       |     |  |
| Reject                         | 0-40  |                        |       |       |     |        |       |       |       |     |  |
|                                | 11-20 |                        |       |       |     |        |       |       |       |     |  |
|                                | 21-30 |                        |       |       |     |        |       |       |       |     |  |
|                                | 31-40 |                        |       |       |     |        |       |       |       |     |  |
|                                | 41+   |                        |       |       |     |        |       |       |       |     |  |

II. Evaluate accuracy of ASVAB AFQT 6 and 7 norms.

A. Variables.

1. Reference test is AFQT 7A.
2. Operational AFQT 6E and 7E and subtest scores from ASVAB 6 and 7.
3. Background data: Same as IA3.

B. Data Collection Procedures.

Same as IB except test period is 18 - 22 June 1979 for alternative 1 and 25 June - 6 July 1979 for alternative 2.

C. Analysis.

Same as IC.



(10)

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

18 MAY 1979

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering  
Committee Meeting

An ASVAB Steering Committee meeting was held on 7 May 1979.

The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Deputy Assistant Secretary of Defense (Military Personnel Policy), Chairman, and the Directors of Military Personnel Management/equivalent of each Service. The list of attendees and discussion topics are shown in the enclosure.

The following areas were discussed with decisions indicated:

a. The role of the steering committee was reviewed by the chairman. He reminded the committee that it was a forum for all the Services and MEPCOM to comment and provide input. The committee provides guidance to the Executive Agent. Any changes in guidance would be made by the committee. The committee must continue to steer the actions on ASVAB and has the overall responsibility. Members of the committee should go directly to the chairman with issues or suggested changes to the program so they can be discussed and problems resolved.

b. Progress report on replacement forms 8, 9 and 10 was provided by the Air Force:

All materials for the sample testing being done by the Educational Testing Service (ETS) under an OSD contract were mailed to the schools used for the sampling prior to 31 March. Some test results are being received by the Air Force Human Resources Laboratory and answer sheets are being scored for evaluation.

ETS is expected to complete analysis by 1 July 79 with materials ready for printing by 1 Aug 79 and tests ready for use by 1 Oct 79. The Air Force is reasonably confident that the dates can be met.

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee Meeting

Admiral Gurney stated that timing studies should be done to determine how long it takes 90-95% of the sample to complete the test. He was concerned that more than two hours of testing time could not be justified for validity purposes, and asked that redundant tests be eliminated from the battery.

During discussion of this issue, it was brought out that some subtests were being dropped from the current battery for these reasons, and that ETS was continuing to evaluate Service data to determine if other subtests could be dropped.

c. The Marine Corps was asked at last Steering Committee meeting to check out calibration of scores for the two new AFQT replacement forms with those forms in current use. Dr. Sims reported on the results from his study:

Test data were collected on over 3,000 Marine Corps accessions shortly after enlistment.

Analysis shows that one of the replacement forms has the same equivalence table as the two forms in current use. The other replacement form will require a different equivalence table. This has been developed by AFHRL and is being turned over to MEPCOM so that the new forms can become operational as soon as possible.

AFQT 7A (the form used during the 1960's) was also administered to Marine Corps recruits. Results from a previous analysis by Dr. Sims had shown current norms might be off by six percentile points at the lower ability levels. Results from the present study show current norms could be off by much more.

These results could seriously affect supply when ASVAB forms 8, 9 and 10 become operational since these forms are being normed against AFQT 7A. If Dr. Sims' studies are confirmed, a number of individuals now being accepted for service could be rejected with the introduction of the new battery.

The committee agreed that a study should be conducted that would be definitive in identifying whether or not a norming problem exists, and if so, its extent. The working group was asked to design such a study for approval by the Steering Committee. The committee agreed that the study must be expedited and a plan should be presented within two weeks.

The chairman introduced as a discussion item whether or not DOD should continue to base mental category scores on the World War II mobilization population. He stated that the subject required review and would be discussed at a future meeting.

**MEMORANDUM FOR RECORD**

**SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee Meeting**

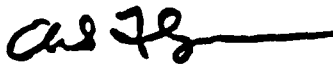
The chairman introduced as a discussion item whether or not DOD should continue to base mental category scores on the World War II mobilization population. He stated that the subject required review and would be discussed at a future meeting.

d. Use of the interest test (VOICE) in high school testing was discussed by OSD. There is a possibility that the use of interest tests in high schools as a part of ASVAB testing may benefit the Services and the schools. It would provide interests as well as aptitudes. MEPCOM indicated that caution should be exercised to insure that the interest test is not preferred to the ASVAB which would impact on recruiting. MEPCOM will look into this to get the reaction of school counselors, and to determine the logistics that would be required if VOICE were introduced in schools.

e. The chairman discussed considering a larger DOD role for MEPCOM which would include:

- (1) ASVAB (Contract or in-house capability).
- (2) Joint Advertising.
- (3) Joint Market Research.

This would be considered in conjunction with MEPCOM being designated as a stand-alone defense agency directly under OSD or as an activity reporting directly to the Army staff. The Services would continue their Service-related research in the testing area. OSD will draft a paper on this and circulate it informally for comments. If it is formally proposed, it will then go through the Service staffs.




Eli S. Flyer  
Executive Secretary

**Attachments**

**cc: Steering Committee Members**

Approved by the Steering Committee:

18 MAY 1979

  
MG Stanley M. Umstead, Jr., USAF  
DASD(MPP)

MG James G. Boatner, HQ DA  
DAPE-MP

RAdm James R. Hogg, USN  
OP-13

MG Herbert L. Emanuel, USAF  
AFMPP

MG Arthur J. Poillon, USMC  
MC/MP

RAdm Charles E. Gurney III, USN  
MEPCOM

ASVAB STEERING COMMITTEE MEETING

7 May 1979

Agenda Items

Air Force

Progress report on ASVAB replacement forms 8, 9, and 10

Marine Corps (CNA)

Norming of AFQT replacement forms

Preliminary evaluation of AFQT compromise

OSD

Use of interest test (VOICE) in high school testing program

MEPCOM

Proposal that MEPCOM be proponent agency for following functions:

- (a) Chair ASVAB Working Group
- (b) Coordinate and supervise development of all follow-on-versions of ASVAB to include item development, item analysis, and norming and standardization
- (c) Preparation and distribution of all test copy and related materials

Note: Discussion to follow each agenda item

Attendees

Deputy Assistant Secretary of Defense, Military Personnel  
Policy (Chairman), OASD(MRA&L)

MG Stanley M. Umstead, Jr. (Stan)  
Dr. Al Martin  
Dr. Eli Flyer

Director of Military Personnel Management, Office of the DCS/Personnel, HQ DA

MG James G. Boatner (Jim)  
Mr. Lou Ruberton  
Dr. Milton Maier

Director, Military Personnel and Training Division (OP-13B)

Capt Paul D. Butcher  
Mr. Dick Hoshaw

Director of Personnel Programs (AF/MPP)

MG Herbert L. Emanuel (Herb)  
Col Tyree Newton  
LtCol Wayne Shore  
Dr. Lonnie Valentine

Director, Manpower Plans and Policy Division, HQ USMC

MG Arthur J. Poillon (Jake)  
LtCol William Osgood

Deputy Commander, MEPCOM

RAAdm Charles E. Gurney III





MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

14 AUG 1979

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery Steering Committee Meeting

An Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee meeting was held on 19 July 1979.

The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Office of the Deputy Assistant Secretary of Defense (Military Personnel Policy) and the Directors of Military Personnel Management/equivalent of each Service. The list of attendees and discussion topics is shown in the enclosure.

The Chairman opened the meeting by informing the committee that they would carefully review the plan for and the progress to date of the new ASVAB forms (8, 9, and 10).

The following areas were discussed with decisions indicated:

a. Progress on ASVAB 6 and 7 Norming Study. The Executive Secretary of the Steering Committee reported that the purpose of the study was to evaluate the accuracy of ASVAB norms and estimate the effects of alternative norms on personnel supply. To check the norming, the Army Research Institute (ARI) was designated by the ASVAB Steering Committee (in its meeting in May 1979) to check the norms against the current applicant population. To accomplish this, MEPCOM collected data on 15,000 applicants in June and July 1979. A preliminary analysis of 1,000 cases indicates that the norms are off at the lower range of the score scale. This preliminary finding is not conclusive, and the entire 15,000 sample scale must be analyzed. In addition, in September 1979, additional tests will be administered in high schools to control for the confounding effects of possible test compromise in this norming effort.

The overall schedule for completion of this effort, which includes accuracy of norms and effects of alternative norms on percentage of applicants qualified for each Service, is October 1979 with report due in December 1979.

(11)

The MEPCOM member informed the committee that the two new AFQT forms (6e and 7e), which were now available throughout MEPCOM, are being used along with the old 6 and 7 forms and will be operational in all AFEES effective 23 July 1979.

b. Common Composites. The Executive Secretary also reported that during the development of ASVAB 8, 9, and 10 (new forms), composites of each Service will be reviewed to include consideration of the feasibility of common composites for similar jobs.

In response to the Air Force member's question as to the thrust of common composites, the Chairman advised that in accordance with DoD response to a GAO report, OSD was required to determine the feasibility of common composites. The committee agreed that this should be an item on the agenda for the next meeting.

c. ASVAB Data for a Nationally Representative Sample. The Executive Secretary reported that OSD is examining the feasibility of testing a representative sample of high schools with the ASVAB to see how the present population qualifies on the ASVAB (AFQT and aptitudes). The sample will include persons still in school, graduates, and dropouts. The Chairman noted that substantial resources were required for such project. He advised that Admiral Gurney has \$200,000 available now and may have another \$100,000 that can be made available for this effort and to expedite the work on preparing ASVAB 8, 9, and 10 forms. Admiral Gurney confirmed this, and the committee agreed to accept the funds. The plan is to address this effort by extending the ongoing contract with the Educational Testing Service (ETS).

Additional discussion following the Navy member's question, "Isn't there something to show the change in ability?", indicated that Scholastic Aptitude Tests (SAT) show a down trend since the mid-60's in verbal ability. However, there is no evidence on distribution of job abilities. This new effort will provide information about the appropriateness of using the World War II mobilization population as the reference base for ASVAB norms. The committee agreed that problems in this area and benefits from such a study effort should be on this agenda for the next meeting.

d. Progress Report on ASVAB Replacement Forms 8, 9, and 10. The Chairman thanked Admiral Gurney for stressing the need to conduct a thorough analysis of all the steps required to implement the new forms of the ASVAB. The ASVAB Working Group had been meeting for a week to conduct this analysis, and it was concluded that there are many complex problems still to be resolved.

Air Force, as executive agent for development of ASVAB forms, presented a projected schedule for completing and implementing the new ASVAB and described three Task Groups which have been formed to accomplish the work. The projected schedule and task groups are attached.

The MEPCOM member advised that the ASVAB 5, which will be continued in the high school testing program when the new tests are implemented, must be considered in the overall plan.

The Navy member advised that we need a realistic target which we feel we can make. The Chairman agreed that we should review the progress more often and meet monthly.

e. Funding for Printing of ASVAB Forms. The Air Force representative reported that the estimated printing costs for new ASVAB forms (6e, 7e, 8, 9, and 10) are \$195,000. The Chairman informed the committee that the policy has been that each Service pay their share of funding.

The Marine Corps member stated that they had little funds for this purpose. The Chairman requested that the Marine Corps check to see if they could fund their share (\$19,500).

The MEPCOM member stated that they could budget for printing in the future if the Services agree to this. The committee agreed that they are in favor of MEPCOM budgeting for printing ASVAB materials.

The Army advised that they would have to check on budget procedures, and the committee asked that this be done.

The Chairman reiterated the importance of developing the new forms in a systematic and professional manner so that the test will not be susceptible to criticism. OSD will continue to take an active role in the development of the new forms. This is a joint project, and the Steering Committee will continue to be involved with all aspects of ASVAB development and maintenance.

*Milton Maier*  
Milton Maier  
Executive Secretary

Enclosures

Projected Schedule

ASVAB

8, 9, & 10 Development

| <u>Major Events</u>                                    | <u>Original<br/>Date</u> | <u>Current<br/>Date</u> |
|--|--------------------------|-------------------------|
| 1. Test assembly<br>(Educational Testing Service)      | July 79                  | Mid-Aug 79              |
| 2. Tests to printers (Air Force)                       | Aug 79                   | Sep 79                  |
| 3. Timing study (Navy)                                 | (New)                    | Oct 79                  |
| 4. Renorming study (Army)                              | (New)                    | Feb 80                  |
| 5. Tests printed (Air Force)                           | Sep 79                   | Dec 79-Jan 80           |
| 6. Tests distributed (Army/NEPCOM)                     | Oct 79                   | Mar-Apr 80              |
| 7. Personnel system primed to<br>accommodate new tests | --                       | Mar-Apr 80              |

ASVAB Steering Committee Meeting

19 July 1979

Agenda Items

Army

Progress report on ASVAB 6 and 7 norming study.

Air Force

Progress report on ASVAB replacement forms 8, 9, and 10.  
Milestone dates and responsibilities will be presented.

Attendees

Deputy Assistant Secretary of Defense, Military Personnel Policy  
(Chairman), OASD(MRA&L)

Dr. A. J. Martin (Al)  
Dr. Milton Maier (Milt)

Director of Military Personnel Management, Office of the DCS/Personnel,  
HQ DA

MG James G. Boatner (Jim)

Director, Military Personnel and Training Division (OP-13)

RAdm James R. Hogg (Jim)

Director of Personnel Programs (AF/MPP)

MG Herbert L. Emanuel (Herb)

Director, Manpower Plans and Policy Division, HQ USMC

MG Arthur J. Poillon (Jake)

Deputy Commander, MEPCOM

RAdm Charles E. Gurney III (Hi)

## Task Groups

### **I. Psychometric Task Group**

**A. Personnel:** Dr Sims (MC), chief, plus one representative from each Service lab & MEPCOM.

**B. Tasks:** General. Insure technical acceptability of tests.

- Specific.
1. Participate with ETS in selection of test items
  2. Insure test parallelism
  3. Oversee timing and norming studies
  4. Determine test length
  5. Oversee composite definition

### **II. Printing Task Group**

**A. Personnel:** Capt Welsh (AF), chief, plus Lon Ruberta (Army) and two MEPCOM representatives.

**B. Tasks:** General. Provide editorial quality control of tests and related materials, and manage material through the printing process

- Specific.
1. Provide interface with Printing process
  2. Develop answer sheets
  3. Provide quality control of test-related materials
  4. Proofread all tests at Brooks AFB, TX.
  5. Determine printing requirements for experimental booklets and answer sheets
  6. Handcarry materials as required

### III. Reporting Systems Task Group

A. Personnel: Dick Hoshaw, chair, plus each Services' policy rep and Service support

B. Tasks:       General.    Insure personnel system is prepared for new tests

- Specific.
1. Determine required form changes
  2. Determine ARS changes
  3. Determine individual Service changes required in records and computer systems.
  4. Determine that required changes are incorporated into personnel systems

Approved by the Steering Committee:


  
Dr. A. J. MARTIN  
ODASD(AR)

MG James G. Boatner, HQ DA  
DAPE-MP

RAdm James R. Hogg, USN  
OP-13

MG Herbert L. Emanuel, USAF  
AFMPP

MG Arthur J. Poillon, USMC  
MC/MP

  
RAdm Charles E. Gurney III, USN  
MEPCOM



Approved by the Steering Committee: .....


  
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Dr. A. J. MARTIN  
ODASD(AR)

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MG James G. Boatner, HQ DA  
DAPE-MP

  
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RADM James R. Hogg, USN  
OP-15

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MG Herbert L. Emanuel, USAF  
AFMPP

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MG Arthur J. Poillon, USMC  
MC/MP

  
\_\_\_\_\_  
RADM Charles E. Gurney, III, USN  
MEPCOM

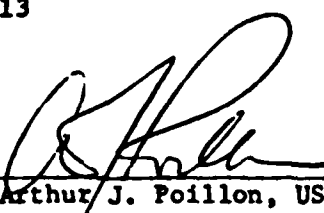
Approved by the Steering Committee:

  
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Dr. A. J. MARTIN  
ODASD(AR)

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MG James G. Boatner, HQ DA  
DAPE-MP

\_\_\_\_\_  
RAdm James R. Hogg, USN  
OP-13

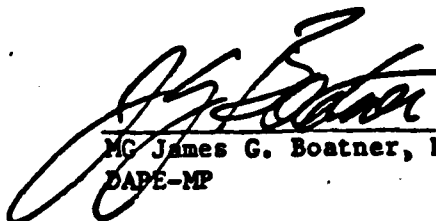
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MG Herbert L. Emanuel, USAF  
AFMPP

  
\_\_\_\_\_  
MG Arthur J. Poillon, USMC  
MC/MP

\_\_\_\_\_  
RAdm Charles E. Gurney, III, USN  
MEPCOM

Approved by the Steering Committee:

  
Dr. A. J. MARTIN  
ODASD(AR)

  
MG James G. Boatner, HQ DA  
DAPE-MP

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OP-13

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AFMPP

MG Arthur J. Poillon, USMC  
MC/MP


RAdm Charles E. Gurney, III, USN  
MEPCOM

Approved by the Steering Committee:

  
Dr. A. J. MARTIN  
ODASD(AR)

MG James G. Boatner, HQ DA  
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MG Arthur J. Poillon, USMC  
MC/MP

RAdm Charles E. Gurney, III, USN  
MEPCOM



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

12

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

16 OCT 1979

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering  
Committee Meeting

An ASVAB Steering Committee meeting was held on 5 October 1979. The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Director of Accession Policy (OSD), Chairman, and the Directors of Military Personnel Management or equivalent of each Service. The list of attendees and discussion topics are at enclosure 1.

The following areas were discussed with decisions indicated:

a. Implementation of ASVAB 8, 9, and 10.

The Executive Secretary reported that the Working Group had developed a schedule for implementation of forms 8, 9, and 10. The scheduled implementation date is 1 October 1980. The actions required and expected dates of completion are at enclosure 2.

Dr. Martin reviewed steps taken to improve the management of ASVAB: (1) Three task groups (Psychometric, Policy and Reporting Systems, and Printing) were formed within the Working Group to focus on different aspects of developing and implementing new forms. (2) The position of Executive Secretary of the Steering Committee grew out of OSD taking a more active role in the development of ASVAB. The Secretary provides technical support to OSD on ASVAB. This increased managerial control is required to ensure that the new ASVAB tests and the norms are accomplished in a professionally competent manner.

The Marine Corps member stated that we should not miss the scheduled implementation date of 1 October 1980. The MEPCOM member recommended that efforts be made to push up by 30 days the projected dates for completion of testing materials and norms (from 31 May 1980 to 30 April 1980).

The Air Force reported that one test form (8A) and the answer sheets are at the printers and will be ready by 15 November 1979 for the timing and norming studies. The Executive Secretary reported the form currently

being printed (8A) had been reviewed and found to be appropriate for all groups. All test items in the remaining forms are also being reviewed to ensure that they are applicable to minority groups.

Several members asked for a review of the one year delay from the earlier projected implementation date of 1 October 1979. The Executive Secretary reported that the test booklets were almost ready, as originally planned, in October 1979, but an evaluation of steps required to implement new forms in the field showed that about 12 months are needed to revise the reporting systems and to conduct field tests. The committee agreed that the implementation schedule should be continuously reevaluated to ensure that the projected date of 1 October 1980 is met.

MEPCOM recommended that the Working Group look into the possibility of each Service computing its own composites from the subtest standard scores to be provided by MEPCOM. The committee agreed that the Working Group should resolve the computation question. The chairman stated that we must make sure that quality control is fully maintained and that MEPCOM's role of quality assurance should not be lessened in any way.

b. Norming Problem and ASVAB Score Scale.

The current ASVAB norms appear to overestimate the ability of persons in mental categories IIIB and IV. Preliminary results, which include the effects of some test compromise, of the extent of the misnorming are at enclosure 3. In early 1980, additional information on the norming problem will be obtained on a sample of high school students, which should enable improved estimates of the impact of test compromise. Educational Testing Services (ETS) is conducting the study for OSD. An item for the next committee meeting will be the effect of alternative norms on manpower supply.

c. Nationally Representative Sample of 17-21 year olds.

The purpose of this effort would be to determine the ability of the current population as compared to the WW II population. The main question is how to fund the cost of approximately \$600K+. The committee agreed that since ASVAB norms are suspect, this study is mandatory to interpret scores in today's population. OSD will look for funds, and the Services were requested to see to what extent they could fund this effort. At the next meeting, the funding and parameters for this study will be presented for discussion.

d. Norming of ASVAB 8, 9, and 10 in Representative High Schools.

Norms for 11th and 12th grade high school students are required for the high school testing program. The estimated cost is about \$350K. At the next meeting, the relationship between the norms for high schools and the sample of 17-21 year olds will be discussed.

e. Common Composites.


The common composites issue continues to be a matter of concern; however, it does not impact on the implementation of ASVAB 8, 9, and 10. It will be addressed by the Working Group as soon as the critical norming problems are resolved.

f. The committee agreed that the Reporting System Task Group should also address policy issues.

g. MEPCOM proposed that cases of suggested test compromise be resolved through a pseudo AFQT rather than retesting with the regular AFQT. The committee agreed that since more work is required on this subject, it should be reviewed by the ASVAB Working Group.

The Chairman closed the meeting by reiterating the importance of developing the new ASVAB forms in a professional manner. He scheduled the next meeting for 1400 hours, 27 November 1979 with the following tentative agenda:

- Progress report on ASVAB 8, 9, and 10.
- Estimates of the impact of misnorming on manpower supply.
- Design and funding for national representative samples.

  
Wilton Maier, Ph.D.  
Executive Secretary

Enclosures (3)

Approved by the Steering Committee:

*A. J. Martin* 10/14/79  
Dr. A. J. Martin  
ODASD (AP)

Col. J. T. Weathers  
DAPE-MP

RAdm James R. Hogg, USN  
OP-13

Col. R. F. Pruitt, USAF  
AFMPP

Col. R. W. Goodale, USMC  
MC/MP

RAdm T. F. Brown III, USN  
MEPCOM





MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

The agenda for the meeting is as follows:

a. Schedule for implementation of ASVAB 8, 9, and 10. An implementation schedule developed by the ASVAB Working Group, together with the Minutes of the Working Group meeting on 13 September 1979 and a progress report on developing the new forms, are attached.

b. Norming Problem and ASVAB Score Scale. A paper entitled "The ASVAB Score Scale" is attached. A report on the results of the AFEES norming study will be presented by the Army Research Institute.

c. Nationally representative Sample.

A paper entitled "Manpower Supply in the Current Population" is attached. This paper presents the rationale for administering the new ASVAB to a representative sample of the civilian population.

d. High School Norming of ASVAB 8, 9, and 10.

The specifications for norming ASVAB 8, 9, and 10 in a representative sample of high school students in grades 11 and 12 is attached.

e. Common Composites.

A list is attached showing the composites each service will use when the new ASVAB is implemented. Further discussions leading toward the next generation of composites will be continued by the ASVAB Working Group.

Incls  
as

MILTON H. MAIER, Ph.D.  
Executive Secretary

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ASVAB STEERING COMMITTEE MEETING - 5 OCTOBER 1979

ATTENDEES

| <u>NAME</u>         | <u>ORGANIZATION</u>      | <u>PHONE</u> |
|---------------------|--------------------------|--------------|
| Dr. Milt Maier      | Army Research Institute* | 697-9271     |
| Dr. A. J. Martin    | OASD (MRA&L)             | 695-5527     |
| Adm J. R. Hogg      | OPNAV (OP-13)            | 694-5571     |
| Adm T. F. Brown III | CDR MEPCOM               | 459-3868 (A) |
| Col. R. W. Goodale  | HQMC (Code MP)           | 694-2074     |
| Col. J. T. Weathers | ODCSPER - DMPM           | 697-0577     |
| Col. R. F. Pruitt   | HQ USAF - MPX            | 697-5222     |
| Col. E. M. Bushong  | HQ MEPCOM                | 459-2366 (A) |
| Col. C. H. Keck     | HQ USAR - MPX            | 695-9855     |
| Mr. L. A. Ruberton  | HQ USA (ODCSPER)         | 695-0836     |
| Mr. C. R. Hoshaw    | OPNAV (135L)             | 694-5511     |
| LTC W. R. Smith     | HQ MEPCOM                | 459-2811 (A) |
| MAJ R. Dzwonkiewicz | HQ MEPCOM                | 459-2210 (A) |
| MAJ C. D. Kuhn      | HQMC (MP1-20)            | 694-4165     |
| MAJ R. R. Harris    | HQMC (MP1-20)            | 694-4165     |
| CPT J. R. Welsh     | HQ USAF - MPCYPT         | 487-3167     |

\*Executive Secretary

# ASVAB 8, 9, 10 IMPLEMENTATION SCHEDULE

1980

Estimated Time for Completion

1979

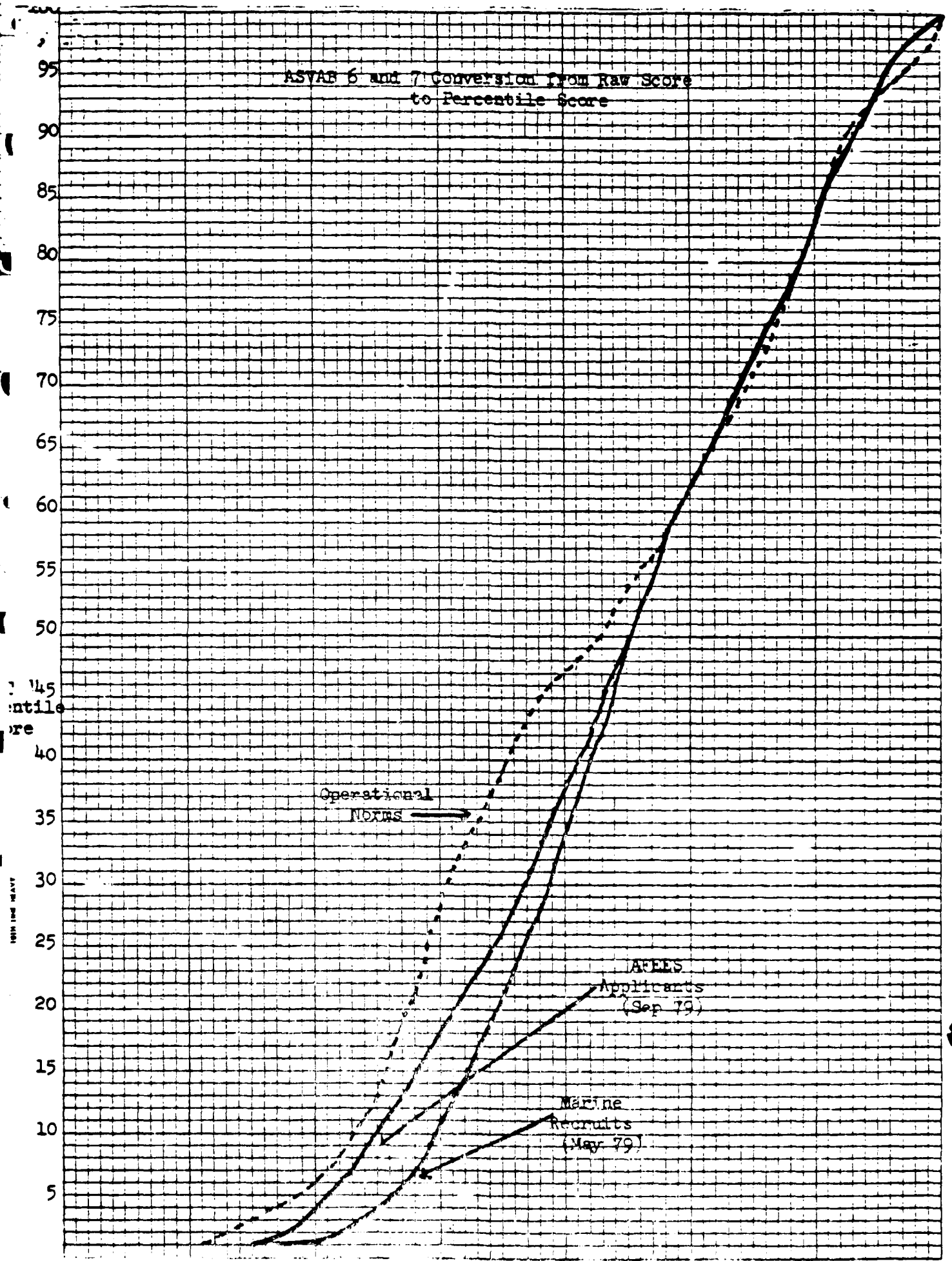
| ITEM                  | OCT          | NOV             | DEC             | JAN               | FEB | MAR | APR | MAY        | JUN | JUL          | AUG | SEP |
|-----------------------|--------------|-----------------|-----------------|-------------------|-----|-----|-----|------------|-----|--------------|-----|-----|
| FORM 1304             | RS           | Printing        |                 |                   |     |     |     |            |     |              |     |     |
| FORM 1966             | RS           | DoD Forms Group |                 |                   |     |     |     |            |     |              |     |     |
| FORM 714              | RS           | MEPCOM          |                 |                   |     |     |     |            |     |              |     |     |
| ANSWER SHEETS         | PRINTING     | First Delivery  |                 |                   |     |     |     | To AG Pubs |     |              |     |     |
| TEST BOOKLETS         | PRINTING     | First Delivery  |                 |                   |     |     |     | To AG Pubs |     |              |     |     |
| MANUALS: ADM. SCORING | PSY          | Printing        |                 |                   |     |     |     |            |     |              |     |     |
| TIMING AND NORMING    | PSYCHOMETRIC | Timing          | Norming         | Conversion Tables |     |     |     |            |     |              |     |     |
| AFES REPORTING SYSTEM | RS           | MEPCOM          | System Revision |                   |     |     |     |            |     | FIELD TRYOUT |     |     |

RS - Reporting Systems Task Group

Printing - Printing Task Group

Psychometric - Psychometric Task Group (PSY)

End 2  
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APPENDIX E

REFERENCES

ASVAB POLICY MATTERS FOLLOWING  
IMPLEMENTATION OF FORMS-6/7



ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

MANPOWER AND  
RESERVE AFFAIRS

2 DEC 1975

MEMORANDUM FOR Assistant Secretaries of the Military Departments  
(Manpower and Reserve Affairs)

SUBJECT: ASVAB Test Policies

Under the centralized testing system, ASVAB 6 and 7 will be administered only at the AFEES starting 1 January 1976. One of the scrambled versions of ASVAB 6 or 7 may be used for in-service testing purposes. ASVAB 3 or current Service tests will continue to be used for Reserve and National Guard applicants who are not tested at AFEES with ASVAB 6 and 7. Enlistment eligibility established by ASVAB 5, 6 or 7 will be valid for a period not to exceed a year from the date of test administration.

Retests with ASVAB 6 and 7 are authorized six months following the initial test with ASVAB 5, 6 or 7. Exceptions may be made 30 days after the initial test when the Recruiting Commander in grade of Major or above personally determines that the initial test scores may not reflect the true capability of an applicant. Services, other than the one authorizing the exception, may reserve the right to accept the original test scores for enlistment purposes. However, any additional retest cannot be authorized until 6 months after the latest retest accomplished by AFEES.

Immediate retest of an applicant is authorized if, in the opinion of the AFEES commander, there is reason to suspect the test results; the applicant becomes sick during testing; or for some obvious reason, the AFEES test administrator determines that the applicant is in no condition to take the mental test.

ASVAB 5 will be implemented in high schools and replace ASVAB 2, no later than 1 March 1976.

*William K. Brooks*

William K. Brooks





OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

11 August 1978

(Military Personnel Policy)

MEMORANDUM FOR THE RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee Meeting

1. An ASVAB Steering Committee Meeting was held on 9 August 1978.

a. The Committee meets periodically when required to provide guidance on development and use of the ASVAB.

b. Members include the Deputy Assistant Secretary of Defense (Military Personnel Policy), Chairman, and the Directors of Military Personnel Management/equivalent of each Service. The list of attendees is shown in attachment 1.

2. Discussion topics are shown in attachment 2.

3. The following decisions were reached:

a. Air Force would continue to chair the ASVAB Working Group as Executive Agent for all ASVAB R&D. The Working Group, which includes representatives from all the Services and MEPCOM assists the Air Force in ASVAB research. LTC Wayne Shore, ASVAB Working Group Chairman, will report to the Steering Committee (on ASVAB Working Group matters) through its executive secretary, Dr. Eli Flyer. The need for a permanent, full-time Working Group Chairman will be reconsidered by the Steering Committee at a later date.

b. An outside consultant would be made available by OSD to the Steering Committee and Working Group. This will be a top test expert from the Educational Testing Service in Princeton.

c. ASVAB would be used to estimate reading levels of new recruits. Air Force briefed and assured the Committee that the study they are conducting will be completed by 1 October 1978.

d. Current forms of ASVAB will be replaced with completely new forms by FY 80 except for the form used to test high school students which will be discussed later.

- The new forms will have sufficient items to ensure reliability, increased accuracy and provide adequate information for determining mental category and classification for training.

- Tests used for determining mental category will be longer and alternate forms of such tests developed for substitution as needed to reduce test compromise.

- Analyses will be conducted to determine whether or not current ASVAB subtests are redundant and should be dropped from the new battery, and whether or not other subtests should be combined.

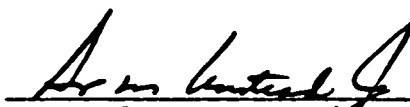
- Air Force (as Executive Agent for R&D) was tasked to submit a schedule to the Steering Committee by 30 August 1978 showing actions needed to develop the new forms, completion dates, agencies involved and primary action officers.

e. Composition of the tests used (AFQT scores) to identify mental category will be evaluated to determine whether improvements can be made. At present three subtests are required. Four subtests were used prior to 1973 and some Services rely on only two.

4. Future meetings will be scheduled by OSD periodically and special meetings may be called at the request of any member.

Eli S. Flyer  
Executive Secretary


Approved by the Steering Committee:

  
MG Stanley M. Umstead, Jr., USAF  
DASD(MPP)

MG Paul S. Williams, Jr., USA  
DAPE-MP

RA James A. Winnefeld, USN  
BUPERS/PERS 2

BG Herbert L. Emanuel, USAF  
AFMPC/CV

  
MG Arthur J. Poillon, USMC  
MC/MP

Attachments

cc: Attendees



**Attendees**

**Steering Committee Meeting  
9 August 1978**

**Deputy Assistant Secretary of Defense, Military Personnel  
Policy (Chairman), OASD(MRA&L)**

**MG Stanley M. Umstead, Jr. (Stan)  
Dr. Eli Flyer**

**Director of Military Personnel Management, Office of the  
DCS/Personnel, HQ DA**

**MG Paul S. Williams, Jr. (Paul)  
Mr. Lou Ruberton**

**Assistant Chief of Naval Personnel for Personnel Planning  
and Programming, Bureau of Naval Personnel**

**RA James A. Winnefeld (Jim)  
Mr. Dick Hoshaw**

**Deputy Assistant DCS/Personnel for Military Personnel,  
Air Force Manpower and Personnel Center**

**BG Herbert L. Emanuel (Herb)  
LC Wayne Shore  
Dr. Lonnie Valentine**

**Director, Manpower Plans and Policy Division, HQ USMC**

**MG Arthur J. Poillon (Jake)  
LC William Osgood**

**ASVAB**  
**STEERING COMMITTEE**  
**MEETING**

**9 AUGUST 1978**

## **DISCUSSION TOPICS**

**ASVAB STEERING COMMITTEE AND WORKING GROUP**

**CONSULTANT SUPPORT TO THE ASVAB WORKING GROUP**

**HISTORY OF MENTAL TESTING IN DOD**

**CONTENT -- ASVAB FORMS 5, 6, AND 7**

**AFQT VERIFICATION TO REDUCE THE EFFECTS OF TEST  
COMPROMISE**

**ENTRY LEVEL SCREENING FOR LITERACY LEVEL**

**ASVAB REPLACEMENT FORMS 8, 9, AND 10**

**COMPOSITION OF AFQT**

## **ASVAB STEERING COMMITTEE**

COMMITTEE WAS FORMED IN MAY 1974 BY DEFENSE MANPOWER POLICY COUNCIL TO OVERSEE IMPROVEMENT AND MODIFICATION OF THE ASVAB AS THE DOD ENLISTED SELECTION TEST.

CHAired ORIGINALLY BY THE DASD(MANPOWER REQUIREMENTS AND ANALYSIS). BEING REACTIVATED TO REVIEW WORKING GROUP PROGRAM AND SERVE AS A FORUM FOR DISCUSSION AND RESOLUTION OF ASVAB-RELATED ISSUES.

## **ASVAB WORKING GROUP**

WORKING GROUP WAS FORMED BY STEERING COMMITTEE TO CARRY OUT TASKS ASSIGNED BY THE COMMITTEE.

MEMBERSHIP CONSISTS OF ONE MEPCOM REPRESENTATIVE, AND ONE PERSONNEL STAFF OFFICER AND ONE PERSONNEL RESEARCHER FROM EACH SERVICE. OTHER ORGANIZATIONS ARE INVITED TO ATTEND MEETINGS AS NEEDED TO DISCUSS SPECIFIC AGENDA ITEMS.

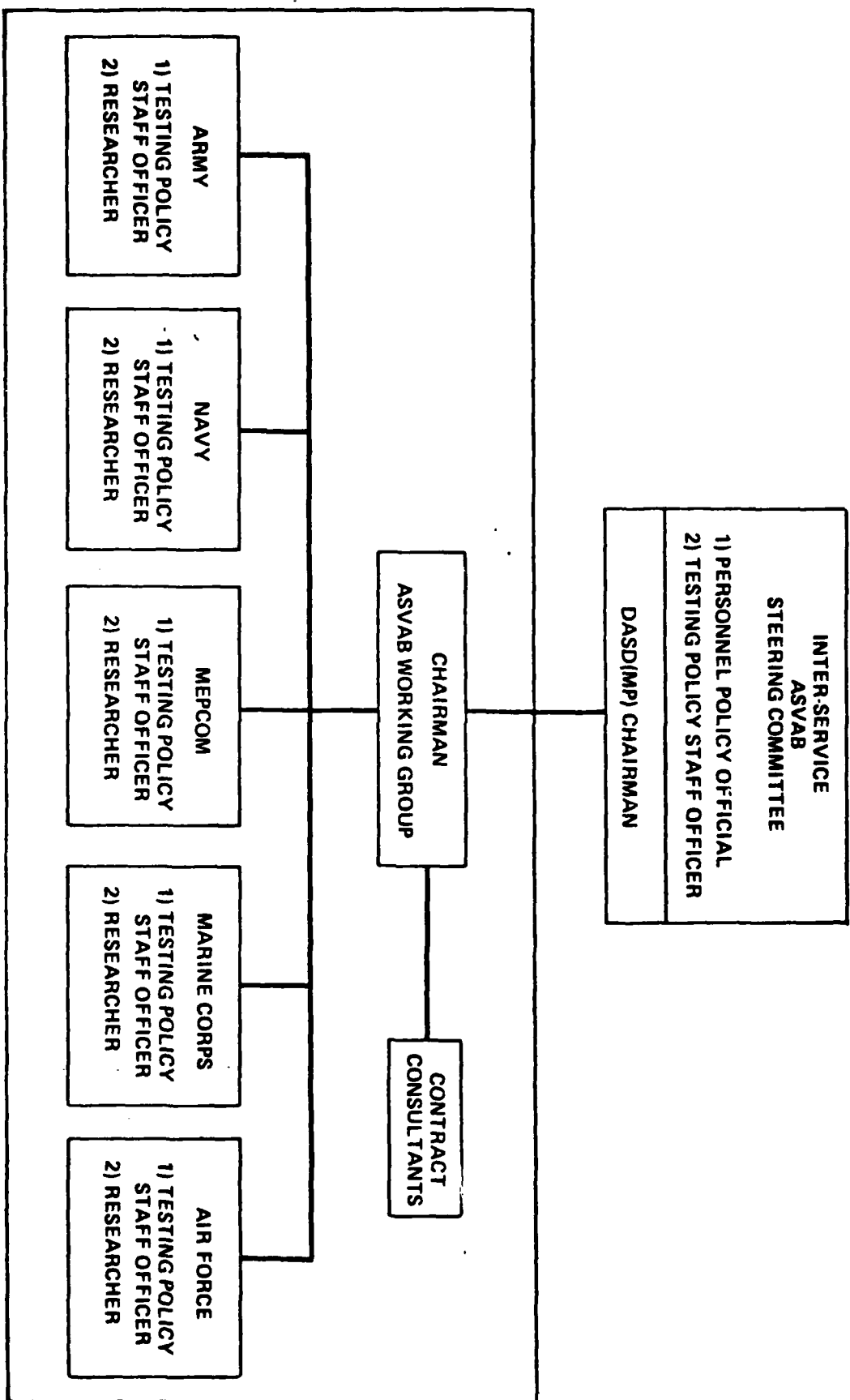
HAS CONTINUED TO MEET PERIODICALLY TO MAINTAIN TESTING PROGRAM AND ADDRESS RELATED MATTERS.

CHAIRMANSHIP WAS INITIALLY FROM OSD STAFF, BUT WAS LATER ASSUMED BY AN AIR FORCE TESTING POLICY STAFF OFFICER ON A PART TIME BASIS.

POSITION NOW VACANT AND DECISIONS NEEDED ON FOLLOWING:

1. AMOUNT OF TIME REQUIRED FOR CHAIRMANSHIP
2. SPONSORING ORGANIZATION, REPORTING CHANNELS AND DESIGNEE

# ASVAB STEERING COMMITTEE AND WORKING GROUP



## **CONSULTANT SUPPORT TO THE ASVAB WORKING GROUP**

**PROBLEM** -- WORKING GROUP ACTIVITIES COVER A WIDE RANGE OF HIGHLY TECHNICAL ISSUES AND SERVICE RESEARCHERS OFTEN DIFFER ON THESE MATTERS. THIS HAS LED TO MANY FALSE STARTS AND AN INABILITY TO MEET DEVELOPMENT SCHEDULES.

OUTSIDE EXPERT UNDER CONTRACT COULD ASSIST WORKING GROUP RESOLVE TECHNICAL ISSUES, IDENTIFY AREAS FOR TEST IMPROVEMENT, AND RECOMMEND NEW APPROACHES.

PRIORITY NEED TO ASSIST IN DEVELOPMENT OF REPLACEMENT BATTERY 8, 9, AND 10.

CONTRACT PROPOSAL HAS BEEN RECEIVED FROM EDUCATIONAL TESTING SERVICE (ETS) WHICH WOULD PROVIDE SERVICES OF DR. ROBERT BOLDT.

DR. BOLDT HAS MILITARY TESTING BACKGROUND AND IS CONSIDERED A LEADING AUTHORITY IN TECHNICAL AREAS TO BE COVERED.

OSD HAS FUNDING AVAILABLE TO CONTRACT FOR DR. BOLDT'S SERVICES DURING FY 79 AND HAS STARTED THE NECESSARY ACTIONS FOR LETTING THE CONTRACT.

## **HISTORY OF MENTAL TESTING IN DOD**

- 1951** AFQT SINGLE COMMON MENTAL TEST FOR DOD SELECTION, AND BASED ON FOUR SUBTESTS: WORD KNOWLEDGE, ARITHMETIC REASONING, TOOL KNOWLEDGE, AND PATTERN ANALYSIS. NORMS BASED ON WORLD WAR II MOBILIZATION POPULATION.
- 1958** SUPPLEMENTARY SERVICE APTITUDE TESTS ALSO AUTHORIZED FOR SELECTION. AFQT WAS REQUIRED TO BE ADMINISTERED TO RETAIN A COMMON TEST SCORE FOR ACCESSIONS THAT WAS TIED TO PREVIOUS NORMS.
- 1974** SERVICES DIRECTED TO DEVELOP A COMMON TEST BATTERY, INCLUDING AN AFQT.
- 1976** ALL SERVICES BEGIN TO USE ASVAB (FORMS 5, 6 AND 7) AS SINGLE SELECTION CLASSIFICATION TEST. AFQT SCORES OBTAINED FROM THREE SUBTESTS: WORD KNOWLEDGE, ARITHMETIC REASONING, AND SPACE PERCEPTION.

## CONTENT — ASVAB FORMS 5, 6, AND 7

| <u>TEST</u>                   | <u>NUMBER OF<br/>ITEMS</u> | <u>TIME<br/>(MINUTES)</u> |
|-------------------------------|----------------------------|---------------------------|
| GENERAL INFORMATION (GI)      | 15                         | 07                        |
| NUMERICAL OPERATIONS (NO)     | 50                         | 03                        |
| ATTENTION TO DETAIL (AD)      | 30                         | 05                        |
| WORD KNOWLEDGE (WK) *         | 30                         | 10                        |
| ARITHMETIC REASONING (AR) *   | 20                         | 20                        |
| SPACE PERCEPTION (SP) *       | 20                         | 12                        |
| MATHEMATICS KNOWLEDGE (MK)    | 20                         | 20                        |
| ELECTRONICS INFORMATION (EI)  | 30                         | 15                        |
| MECHANICAL COMPREHENSION (MC) | 20                         | 15                        |
| GENERAL SCIENCE (GS)          | 20                         | 10                        |
| SHOP INFORMATION (SI)         | 20                         | 08                        |
| AUTOMOTIVE INFORMATION (AI)   | <u>20</u>                  | <u>10</u>                 |
| TOTALS                        | 295                        | 135                       |

\* SCORES ON THESE THREE SUBTESTS ARE ADDED TOGETHER TO PROVIDE AFQT SCORES.

NOTE: THE ARMY CLASSIFICATION INVENTORY (87 ITEMS AND ABOUT 20 MINUTES IN TIME) IS ADMINISTERED ALONG WITH FORMS 6 AND 7 AS PART OF THE OPERATIONAL TESTING PROCEDURE.



## **AFQT VERIFICATION TO REDUCE THE EFFECTS OF TEST COMPROMISE**

**PROBLEM** -- THERE HAS BEEN CONTINUING CONCERN WITH COMPROMISE OF THE AFQT SUBTESTS WITHIN ASVAB FORMS 6 AND 7 SINCE THEIR INTRODUCTION. VERIFICATION FORMS OF THE AFQT ARE NOT NOW AVAILABLE.

AFQT VERIFICATION TESTS WOULD PROVIDE AN INDICATION OF WHETHER OR NOT AN INDIVIDUAL'S OPERATIONAL TEST SCORES WERE "VALID" ON A PROBABILISTIC BASIS.

MEPCOM HAS BEEN DEVELOPING AN AFQT VERIFICATION PROCEDURE, AND THERE IS AN ONGOING OPERATIONAL PILOT PROGRAM AT TWO AFEES.

WHEN A LARGE VARIANCE IS IDENTIFIED FOR AN APPLICANT BETWEEN TWO SUBTESTS (WORD KNOWLEDGE AND ANOTHER SUBTEST), A RETEST ON ANOTHER WORD KNOWLEDGE FORM IS OBTAINED, AND COMPARISON OF THE RESULTS SHOWN TO THE APPLICANT WITH AN INTERVIEW.

THE APPLICANT SIGNS A STATEMENT TO TAKE ANOTHER FORM OF THE AFQT FOR QUALIFICATION PURPOSES. IF THE APPLICANT PASSES, HE CAN ENLIST; IF HE FAILS HE CAN BE RETESTED IN SIX MONTHS.

GIVEN FAVORABLE RESULTS FROM THE PILOT PROGRAM, COORDINATION WITH THE SERVICES WILL BE OBTAINED PRIOR TO FULL IMPLEMENTATION OF THE VERIFICATION SYSTEM.

## **ENTRY LEVEL SCREENING FOR LITERACY LEVEL**

**PROBLEM** -- THERE HAS BEEN CONCERN THAT APPLICANTS WITH LOW READING SKILLS ARE ENTERING SERVICE, AND THAT A SCREEN FOR LITERACY LEVEL MIGHT BE REQUIRED.

SERVICE RESEARCHERS HAVE BEEN COLLECTING AND ANALYZING DATA FROM A NUMBER OF READING LEVEL STUDIES. THESE STUDIES SHOW THAT:

1. THE READING GRADE LEVEL OF ENLISTEES WILL VARY DEPENDENT ON THE READING TEST TAKEN.
2. AFQT (WORD KNOWLEDGE, ARITHMETIC REASONING, AND SPATIAL SUBTESTS FROM ASVAB) IS HIGHLY CORRELATED WITH READING LEVELS OBTAINED FROM COMMERCIAL READING TESTS. AFQT CORRELATES HIGHER WITH SOME READING TESTS THAN THEY DO WITH EACH OTHER.
3. USE OF AFQT SELECTION SCORES FOR ENLISTMENT REDUCES MARKEDLY THE NUMBER OF POOR READERS WHO ENTER SERVICE.
4. IT IS FEASIBLE TO ESTABLISH CONVERSION TABLES FOR ESTIMATING READING ABILITY LEVELS FROM ASVAB SUBTEST SCORES.
5. A COMBINATION OF WORD KNOWLEDGE AND ARITHMETIC REASONING TEST SCORES FROM THE ASVAB (GT FOR ARMY AND MARINE CORPS, GENERAL AI FOR AIR FORCE) IS A BETTER PREDICTOR OF READING LEVEL THAN THE AFQT.

**RECOMMENDATIONS** -- READING TESTS SHOULD NOT BE USED FOR ENLISTMENT SCREENING PURPOSES. CONVERSION TABLES FOR ESTIMATING READING LEVELS SHOULD BE DEVELOPED BY AFHRL AND BE BASED UPON WORD KNOWLEDGE AND ARITHMETIC REASONING SUBTESTS FROM THE ASVAB.

## **ASVAB REPLACEMENT FORMS 8, 9, AND 10 (OPERATIONAL TESTING PROGRAM)**

**PROBLEM** -- ASVAB FORMS 6 AND 7 WERE INTRODUCED IN 1976. REPLACEMENT FORMS NEEDED IN CASE OF SERIOUS TEST COMPROMISE AND TO EFFECT SOME TECHNICAL IMPROVEMENTS.

ASVAB PROTOTYPE FORMS 8, 9, AND 10 UNDER DEVELOPMENT FOR OVER TWO YEARS. FORMS DEVELOPED BY AFHRL NOT CONSIDERED ACCEPTABLE FOR OPERATIONAL USE BY ARMY AND NAVY. ARMY CONSIDERS SUBTESTS TOO DIFFICULT. NAVY CONCERNED WITH INTER-RELATIONSHIPS AMONG SUBTESTS. ALL SERVICES CONCERNED WITH ADEQUACY OF NORMING.

RESEARCHERS MET IN JUNE 1978 TO REVIEW VALIDITIES OF CURRENT ASVAB AND TO ESTABLISH STRUCTURE AND GUIDELINES FOR REPLACEMENT BATTERY.

WORD KNOWLEDGE AND ARITHMETIC REASONING SUBTESTS WOULD BE LENGTHENED TO PROVIDE INCREASED ACCURACY FOR AFQT, GT, GENERAL AI, AND LITERACY SCREENING. ALTERNATIVE FORMS FOR THE WORD KNOWLEDGE SUBTEST WOULD BE DEVELOPED FOR SUBSTITUTION AS NEEDED IN THE ASVAB TO REDUCE TEST COMPROMISE.

TECHNICAL INFORMATION TESTS (SHOP AND AUTOMOTIVE INFORMATION) WOULD BE MADE MORE GENERAL AND ITEM DIFFICULTY LEVELS WOULD BE LOWERED. A DETERMINATION WOULD BE MADE LATER ON WHETHER OR NOT THE ELECTRONICS INFORMATION SUBTEST COULD BE DROPPED. (AIR FORCE AND NAVY NOW WILLING TO DROP.)

**RECOMMENDATION** -- THE AIR FORCE, AS EXECUTIVE AGENT FOR DEVELOPMENT OF ASVAB, SHOULD SUBMIT A DETAILED SCHEDULE TO THE ASVAB STEERING COMMITTEE OF ALL STEPS, INCLUDING TEST DEVELOPMENT, PRINTING, AND OTHER SUPPORT ACTIONS, WHICH ARE NEEDED TO BE ABLE TO IMPLEMENT THE USE OF ASVAB FORMS 8, 9, AND 10 ON 30 SEPTEMBER 1979.

THE SCHEDULE SHOULD CONTAIN ACTIONS NEEDED, COMPLETION DATES, THE AGENCIES WHICH MUST COMPLETE THE ACTION, AND THE PRIMARY ACTION OFFICER.

THE SCHEDULE SHOULD BE COORDINATED WITH THE SERVICES, AS APPROPRIATE.

THE SCHEDULE SHOULD BE SUBMITTED TO THE CHAIRMAN OF THE ASVAB STEERING COMMITTEE BY 30 AUGUST 1978.

OSD GUIDANCE WILL BE PROVIDED THROUGH THE ASVAB STEERING COMMITTEE CONCERNING THE DEVELOPMENT OF A REPLACEMENT HIGH SCHOOL TEST AND WILL BE AN AGENDA ITEM AT THE NEXT COMMITTEE MEETING.

## COMPOSITION OF AFQT

**PROBLEM** -- DOD CURRENTLY USES THREE ASVAB COMPONENTS TO OBTAIN AN AFQT SCORE. A TWO COMPONENT AFQT MAY BE A MORE EFFECTIVE MEASURE OF GENERAL TRAINABILITY.

### INITIALLY FOUR COMPONENTS TO AFQT:

VERBAL (WORD KNOWLEDGE)  
QUANTITATIVE (ARITHMETIC REASONING)  
NON-VERBAL (SPATIAL)  
NON-VERBAL (TOOL KNOWLEDGE)

### CURRENTLY THREE COMPONENTS TO AFQT:

VERBAL (WORD KNOWLEDGE)  
QUANTITATIVE (ARITHMETIC REASONING)  
NON-VERBAL (SPATIAL)

A TWO COMPONENT AFQT (WORD KNOWLEDGE AND ARITHMETIC REASONING) COULD PROVIDE:

1. AN IMPROVED INDEX OF GENERAL TRAINABILITY
2. A BETTER INDICATOR OF LITERACY LEVEL
3. MORE CONSISTENCY IN USAGE ACROSS SERVICE

### SERVICE SELECTION COMPOSITE SCORES

| <u>SERVICE</u> | <u>3 COMPONENTS a/</u> | <u>2 COMPONENTS b/</u> |
|----------------|------------------------|------------------------|
| ARMY           | YES                    | CONSIDERING            |
| NAVY           | YES                    |                        |
| MARINE CORPS   | YES                    | YES                    |
| AIR FORCE      |                        | YES                    |

a/ CURRENT AFQT

b/ CURRENT GT/GEN. AI

**RECOMMENDATION** -- SERVICE RESEARCHERS SHOULD EVALUATE IMPLICATIONS OF CHANGING AFQT TO A TWO COMPONENT MEASURE, AND MAKE RECOMMENDATIONS ON THIS ISSUE TO THE STEERING COMMITTEE AT ITS NEXT MEETING.



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301  
November 15, 1978

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering  
Committee Meeting

An ASVAB Steering Committee meeting was held on 9 November 1978.

The Committee meets periodically to provide guidance on development and use of the ASVAB.

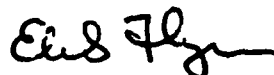
Members include the Deputy Assistant Secretary of Defense (Military Personnel Policy), Chairman, and the Directors of Military Personnel Management/equivalent of each Service. The list of attendees and discussion topics are shown in the enclosure.

The following decisions were reached:

- a. The Armed Forces Qualification Test (AFQT) components (Forms R&S), which the Air Force developed as replacement forms for those currently used in ASVAB 6 and 7, would be used as soon as possible. (Air Force reported that they would be ready in January 1979.) The Marine Corps will check the calibration of R&S norms with ASVAB 6 and 7 and present their findings for approval by the Committee.
- b. Development of ASVAB 8, 9, and 10 will continue with implementation as planned on or about 1 October 1979. The new ASVAB testing time will be kept to the absolute minimum required to provide each Service's needs for selection and classification. It will include three complete forms (ASVAB 8, 9, and 10) each with two AFQT portions for a total of six that can be used with any one of the three forms. Norming will be done by contract with Educational Testing Service (ETS). This will be done in high schools (10, 11, and 12 grade students). Cost, approximately \$250,000. Deputy Commander, MEPCOM, agreed to transfer \$250,000 to ASD (MRA&L) for this purpose. Norming will include timing for completion of the ASVAB (90-95% completion time).

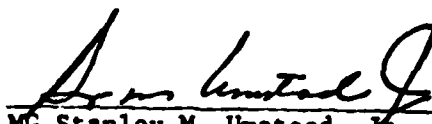
c. The new ASVAB for use in high schools to replace ASVAB 5 (currently used in high schools) would be developed and implemented after FY 1980. Development would begin during latter part of FY 1979 under contract with ETS.

d. The issue of common composites was raised. The Committee agreed that a complete review of the number of aptitude scores used by each of the Services for occupational classification was required to determine whether they were justified statistically. ETS is looking at this as part of the OSD contract, and findings are subject to further review by OSD and the Services. The Army and Air Force representatives advised the Chairman that composites were used for several purposes in addition to recruiting, and composites must continue to meet Service-unique requirements. All attendees concurred.



Eli S. Flyer  
Executive Secretary

Approved by the Steering Committee:-



MG Stanley M. Umstead, Jr., USAF  
DASD(MPP)

MG James G. Boatner, HQ DA  
DAPE-MP

RAdm N. R. Thunman, USN  
OP-13

BG Keith D. McCartney, USAF  
AFMPX

MG Arthur J. Poillon, USMC  
MC/MP

RAdm Charles E. Gurney III, USN  
MEPCOM

Attachment

cc: Steering Committee Members

ASVAB STEERING COMMITTEE MEETING

November 9, 1978

Agenda Items

Air Force

1. AFQT Replacement Forms R and S
2. ASVAB Replacement Forms 8, 9, and 10
3. Norming of ASVAB 8, 9, and 10

OSD

4. High School Replacement ASVAB
5. Feasibility of Common Composites

Note: Discussion to follow each agenda item

Attendees

Deputy Assistant Secretary of Defense, Military Personnel  
Policy (Chairman), OASD (MRA&L)

MG Stanley M. Umstead, Jr. (Stan)  
Dr. Eli Flyer

Director of Military Personnel Management, Office of the DCS/Personnel, HQ DA

MG James G. Boatner (Jim)  
Mr. Lou Ruberton

Director, Military Personnel and Training Division (OP-13)

Capt Dean Butcher  
Mr. Dick Hoshaw

Deputy Director for Personnel Plans (AFMPX)

BG Keith D. McCartney  
LtCol Wayne Shore  
Dr. Lonnie Valentine

Director, Manpower Plans and Policy Division, HQ USMC

MG Arthur J. Poillon (Jake)  
LtCol William Osgood

Deputy Commander, MEPCOM

RAdm Charles E. Gurney III  
Capt George V. Rux



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

(Military Personnel Policy)

18 MAY 1979

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering  
Committee Meeting

An ASVAB Steering Committee meeting was held on 7 May 1979.

The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Deputy Assistant Secretary of Defense (Military Personnel Policy), Chairman, and the Directors of Military Personnel Management/equivalent of each Service. The list of attendees and discussion topics are shown in the enclosure.

The following areas were discussed with decisions indicated:

a. The role of the steering committee was reviewed by the chairman. He reminded the committee that it was a forum for all the Services and MEPCOM to comment and provide input. The committee provides guidance to the Executive Agent. Any changes in guidance would be made by the committee. The committee must continue to steer the actions on ASVAB and has the overall responsibility. Members of the committee should go directly to the chairman with issues or suggested changes to the program so they can be discussed and problems resolved.

b. Progress report on replacement forms 8, 9 and 10 was provided by the Air Force:

All materials for the sample testing being done by the Educational Testing Service (ETS) under an OSD contract were mailed to the schools used for the sampling prior to 31 March. Some test results are being received by the Air Force Human Resources Laboratory and answer sheets are being scored for evaluation.

ETS is expected to complete analysis by 1 July 79 with materials ready for printing by 1 Aug 79 and tests ready for use by 1 Oct 79. The Air Force is reasonably confident that the dates can be met.



MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee Meeting

Admiral Gurney stated that timing studies should be done to determine how long it takes 90-95% of the sample to complete the test. He was concerned that more than two hours of testing time could not be justified for validity purposes, and asked that redundant tests be eliminated from the battery.

During discussion of this issue, it was brought out that some subtests were being dropped from the current battery for these reasons, and that ETS was continuing to evaluate Service data to determine if other subtests could be dropped.

c. The Marine Corps was asked at last Steering Committee meeting to check out calibration of scores for the two new AFQT replacement forms with those forms in current use. Dr. Sims reported on the results from his study:

Test data were collected on over 3,000 Marine Corps accessions shortly after enlistment.

Analysis shows that one of the replacement forms has the same equivalence table as the two forms in current use. The other replacement form will require a different equivalence table. This has been developed by AFHRL and is being turned over to MEPCOM so that the new forms can become operational as soon as possible.

AFQT 7A (the form used during the 1960's) was also administered to Marine Corps recruits. Results from a previous analysis by Dr. Sims had shown current norms might be off by six percentile points at the lower ability levels. Results from the present study show current norms could be off by much more.

These results could seriously affect supply when ASVAB forms 8, 9 and 10 become operational since these forms are being normed against AFQT 7A. If Dr. Sims' studies are confirmed, a number of individuals now being accepted for service could be rejected with the introduction of the new battery.

The committee agreed that a study should be conducted that would be definitive in identifying whether or not a norming problem exists, and if so, its extent. The working group was asked to design such a study for approval by the Steering Committee. The committee agreed that the study must be expedited and a plan should be presented within two weeks.

The chairman introduced as a discussion item whether or not DOD should continue to base mental category scores on the World War II mobilization population. He stated that the subject required review and would be discussed at a future meeting.

**MEMORANDUM FOR RECORD**

**SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee Meeting**

The chairman introduced as a discussion item whether or not DOD should continue to base mental category scores on the World War II mobilization population. He stated that the subject required review and would be discussed at a future meeting.

d. Use of the interest test (VOICE) in high school testing was discussed by OSD. There is a possibility that the use of interest tests in high schools as a part of ASVAB testing may benefit the Services and the schools. It would provide interests as well as aptitudes. MEPCOM indicated that caution should be exercised to insure that the interest test is not preferred to the ASVAB which would impact on recruiting. MEPCOM will look into this to get the reaction of school counselors, and to determine the logistics that would be required if VOICE were introduced in schools.

e. The chairman discussed considering a larger DOD role for MEPCOM which would include:

- (1) ASVAB (Contract or in-house capability).
- (2) Joint Advertising.
- (3) Joint Market Research.

This would be considered in conjunction with MEPCOM being designated as a stand-alone defense agency directly under OSD or as an activity reporting directly to the Army staff. The Services would continue their Service-related research in the testing area. OSD will draft a paper on this and circulate it informally for comments. If it is formally proposed, it will then go through the Service staffs.



Eli S. Flyer  
Executive Secretary

**Attachments**

**cc: Steering Committee Members**

Approved by the Steering Committee:

18 MAY 1979

  
MG Stanley M. Umstead, Jr., USAF  
DASD(MPP)

MG James G. Boatner, HQ DA  
DAPE-MP

RAdm James R. Hogg, USN  
OP-13

MG Herbert L. Emanuel, USAF  
AFMPP

MG Arthur J. Poillon, USMC  
MC/MP

RAdm Charles E. Gurney III, USN  
MEPCOM

ASVAB STEERING COMMITTEE MEETING

7 May 1979

Agenda Items

Air Force

Progress report on ASVAB replacement forms 8, 9, and 10

Marine Corps (CNA)

Norming of AFQT replacement forms

Preliminary evaluation of AFQT compromise

OSD

Use of interest test (VOICE) in high school testing program

MEPCOM

Proposal that MEPCOM be proponent agency for following functions:

- (a) Chair ASVAB Working Group
- (b) Coordinate and supervise development of all follow-on-versions of ASVAB to include item development, item analysis, and norming and standardization
- (c) Preparation and distribution of all test copy and related materials

Note: Discussion to follow each agenda item

Attendees

Deputy Assistant Secretary of Defense, Military Personnel  
Policy (Chairman), OASD(MRA&L)

MG Stanley M. Umstead, Jr. (Stan)  
Dr. Al Martin  
Dr. Eli Flyer

Director of Military Personnel Management, Office of the DCS/Personnel, HQ DA

MG James G. Boatner (Jim)  
Mr. Lou Ruberton  
Dr. Milton Maier

Director, Military Personnel and Training Division (OP-13B)

Capt Paul D. Butcher  
Mr. Dick Hoshaw

Director of Personnel Programs (AF/MPP)

MG Herbert L. Emanuel (Herb)  
Col Tyree Newton  
LtCol Wayne Shore  
Dr. Lonnie Valentine

Director, Manpower Plans and Policy Division, HQ USMC

MG Arthur J. Poillon (Jake)  
LtCol William Osgood

Deputy Commander, MEPCOM

RAAdm Charles E. Gurney III



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

18 May 1979

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE ARMY (MARA)  
ASSISTANT SECRETARY OF THE NAVY (MRA&L)  
ASSISTANT SECRETARY OF THE AIR FORCE (MRA&L)

SUBJECT: Armed Forces Qualification Test Norming Study

The Armed Forces Qualification Test (AFQT) has been the single common mental test for DoD enlisted selection since 1951. Percentile distributions--norms--were based upon the World War II mobilization population. Although there have been many successor versions of the test, AFQT scores continue to be normed back to the earliest version.

During 1958, supplementary Service aptitude tests were also authorized for selection. AFQT continued to be administered to retain a common test score for accessions that could be tied to previous norms. Starting in 1972, however, the Services were permitted by OSD to discontinue use of a common test to determine AFQT. To retain some continuity with the past, the Services were asked to generate AFQT surrogate scores from the Service test batteries being administered to applicants.

The Services were directed during 1974 to develop a common test battery for operational use which would include an AFQT. In 1976, all the Services began to use ASVAB (Forms 5, 6, and 7) as the single DoD selection and classification test. Norming for the AFQT component of the ASVAB continued to track-back to the World War II mobilization population.

Shortly after implementation, there were some indications that the norming of the AFQT was not sufficiently accurate at the upper ability levels. Based upon studies performed by researchers from each Service, new conversion tables were adopted during 1976, which increased the number of AFQT items that had to be passed to qualify at the AFQT I and II levels. The Service researchers recommended a minor change in the conversion tables at the lower ability levels which would make the test slightly easier. Service research laboratory representatives agreed to closely monitor the norms and report any observed irregularities in mental category distributions.

The Center for Naval Analysis in July 1978, published a report based upon Marine Corps enlistees in boot camp. The report indicated that the renorming, which occurred during 1976, had overcorrected at the upper ability levels. In addition, it was reported that norming was

364

- inaccurate at the lower ability levels--that accessions at these levels were somewhat lower in AFQT than was being shown by the operational conversion tables.

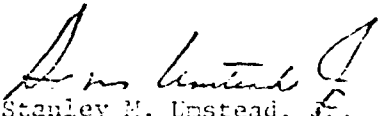
At the request of the ASVAB Steering Committee which I chair, the Center for Naval Analysis conducted a replication study, also based upon Marine Corps recruits, which was reported at the Committee meeting held on 7 May 1979. The results from this study were interpreted to mean that the norms were apparently correct at the upper ability levels but substantially inaccurate at the lower ability levels. There are reasons, however, to question the validity of this latter finding since the data were collected on a restricted sample--enlistees who passed not only an AFQT minimum but other aptitude minimums as well.

The Steering Committee has directed that a major study be undertaken immediately, which would involve applicants for all the Services, to determine the accuracy of current AFQT norms and to take appropriate action if the norms are found to be incorrect. The attached plan has been developed and reviewed by Service researchers for this purpose and has been approved by the ASVAB Steering Committee for implementation.

This norming study will require an additional hour of testing time at the AFES for a four week period. Additionally, to meet the study's design specifications, introduction of two new AFQT replacement forms will have to be delayed for a short period of time.

In my memorandum of 15 February 1979 to you, your assistance was requested in helping the Air Force collect data at the AFES to develop ASVAB replacement forms. This effort, while still critically needed, should be delayed until data for the norming study have been collected. At that point the Air Force data collection should be given the highest priority. A schedule for this data collection should be provided to the Air Force by MEPCOM within the next thirty days.

It is realized that the major burden of this new requirement will fall upon MEPCOM, the Services' recruiting commands, and the Army Research Institute which will conduct the analysis of the data from this study. The full cooperation of all those involved in this important undertaking is essential and appreciated.

  
Stanley M. Unstead, Jr.  
Major General, USAF  
Deputy Assistant Secretary

Attachment



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

14 AUG 1979

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery Steering Committee Meeting

An Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee meeting was held on 19 July 1979.

The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Office of the Deputy Assistant Secretary of Defense (Military Personnel Policy) and the Directors of Military Personnel Management/equivalent of each Service. The list of attendees and discussion topics is shown in the enclosure.

The Chairman opened the meeting by informing the committee that they would carefully review the plan for and the progress to date of the new ASVAB forms (8, 9, and 10).

The following areas were discussed with decisions indicated:

a. Progress on ASVAB 6 and 7 Norming Study. The Executive Secretary of the Steering Committee reported that the purpose of the study was to evaluate the accuracy of ASVAB norms and estimate the effects of alternative norms on personnel supply. To check the norming, the Army Research Institute (ARI) was designated by the ASVAB Steering Committee (in its meeting in May 1979) to check the norms against the current applicant population. To accomplish this, MEPCOM collected data on 15,000 applicants in June and July 1979. A preliminary analysis of 1,000 cases indicates that the norms are off at the lower range of the score scale. This preliminary finding is not conclusive, and the entire 15,000 sample scale must be analyzed. In addition, in September 1979, additional tests will be administered in high schools to control for the confounding effects of possible test compromise in this norming effort.

The overall schedule for completion of this effort, which includes accuracy of norms and effects of alternative norms on percentage of applicants qualified for each Service, is October 1979 with report due November 1979.

The MEPCOM member informed the committee that the two new AFQT forms (6e and 7e), which were now available throughout MEPCOM, are being used along with the old 6 and 7 forms and will be operational in all AFEES effective 23 July 1979.

b. Common Composites. The Executive Secretary also reported that during the development of ASVAB 8, 9, and 10 (new forms), composites of each Service will be reviewed to include consideration of the feasibility of common composites for similar jobs.

In response to the Air Force member's question as to the thrust of common composites, the Chairman advised that in accordance with DoD response to a GAO report, OSD was required to determine the feasibility of common composites. The committee agreed that this should be an item on the agenda for the next meeting.

c. ASVAB Data for a Nationally Representative Sample. The Executive Secretary reported that OSD is examining the feasibility of testing a representative sample of high schools with the ASVAB to see how the present population qualifies on the ASVAB (AFQT and aptitudes). The sample will include persons still in school, graduates, and dropouts. The Chairman noted that substantial resources were required for such project. He advised that Admiral Gurney has \$200,000 available now and may have another \$100,000 that can be made available for this effort and to expedite the work on preparing ASVAB 8, 9, and 10 forms. Admiral Gurney confirmed this, and the committee agreed to accept the funds. The plan is to address this effort by extending the ongoing contract with the Educational Testing Service (ETS).

Additional discussion following the Navy member's question, "Isn't there something to show the change in ability?", indicated that Scholastic Aptitude Tests (SAT) show a down trend since the mid-60's in verbal ability. However, there is no evidence on distribution of job abilities. This new effort will provide information about the appropriateness of using the World War II mobilization population as the reference base for ASVAB norms. The committee agreed that problems in this area and benefits from such a study effort should be on this agenda for the next meeting.

d. Progress Report on ASVAB Replacement Forms 8, 9, and 10. The Chairman thanked Admiral Gurney for stressing the need to conduct a thorough analysis of all the steps required to implement the new forms of the ASVAB. The ASVAB Working Group had been meeting for a week to conduct this analysis, and it was concluded that there are many complex problems still to be resolved.

Air Force, as executive agent for development of ASVAB forms, presented a projected schedule for completing and implementing the new ASVAB and described three Task Groups which have been formed to accomplish the work. The projected schedule and task groups are attached.



The MEPCOM member advised that the ASVAB 5, which will be continued in the high school testing program when the new tests are implemented, must be considered in the overall plan.

The Navy member advised that we need a realistic target which we feel we can make. The Chairman agreed that we should review the progress more often and meet monthly.

e. Funding for Printing of ASVAB Forms. The Air Force representative reported that the estimated printing costs for new ASVAB forms (6e, 7e, 8, 9, and 10) are \$195,000. The Chairman informed the committee that the policy has been that each Service pay their share of funding.

The Marine Corps member stated that they had little funds for this purpose. The Chairman requested that the Marine Corps check to see if they could fund their share (\$19,500).

The MEPCOM member stated that they could budget for printing in the future if the Services agree to this. The committee agreed that they are in favor of MEPCOM budgeting for printing ASVAB materials.

The Army advised that they would have to check on budget procedures, and the committee asked that this be done.

The Chairman reiterated the importance of developing the new forms in a systematic and professional manner so that the test will not be susceptible to criticism. OSD will continue to take an active role in the development of the new forms. This is a joint project, and the Steering Committee will continue to be involved with all aspects of ASVAB development and maintenance.

  
Milton Maier  
Executive Secretary

Enclosures

Projected Schedule

ASVAB

8, 9, & 10 Development

| <u>Major Events</u>                                    | <u>Original<br/>Date</u> | <u>Current<br/>Date</u> |
|--|--------------------------|-------------------------|
| 1. Test assembly<br>(Educational Testing Service)      | July 79                  | Mid-Aug 79              |
| 2. Tests to printers (Air Force)                       | Aug 79                   | Sep 79                  |
| 3. Timing study (Navy)                                 | (New)                    | Oct 79                  |
| 4. Renorming study (Army)                              | (New)                    | Feb 80                  |
| 5. Tests printed (Air Force)                           | Sep 79                   | Dec 79-Jan 80           |
| 6. Tests distributed (Army/MEPCOM)                     | Oct 79                   | Mar-Apr 80              |
| 7. Personnel system primed to<br>accommodate new tests | --                       | Mar-Apr 80              |

ASVAB Steering Committee Meeting

19 July 1979

Agenda Items

Army

Progress report on ASVAB 6 and 7 norming study.

Air Force

Progress report on ASVAB replacement forms 8, 9, and 10.  
Milestone dates and responsibilities will be presented.

Attendees

Deputy Assistant Secretary of Defense, Military Personnel Policy  
(Chairman), OASD(MRA&L)

Dr. A. J. Martin (Al)  
Dr. Milton Maier (Milt)

Director of Military Personnel Management, Office of the DCS/Personnel,  
HQ DA

MG James G. Boatner (Jim)

Director, Military Personnel and Training Division (OP-13)

RAdm James R. Hogg (Jim)

Director of Personnel Programs (AF/MPP)

MG Herbert L. Emanuel (Herb)

Director, Manpower Plans and Policy Division, HQ USMC

MG Arthur J. Poillon (Jake)

Deputy Commander, MEPCOM

RAdm Charles E. Gurney III (Hi)

## Task Groups

### **I. Psychometric Task Group**

**A. Personnel:** Dr Sims (MC), chief, plus one representative from each Service lab & MEPCOM.

**B. Tasks:**       General. Insure technical acceptability of tests.

- Specific.
1. Participate with ETS in selection of test items
  2. Insure test parallelism
  3. Oversee timing and norming studies
  4. Determine test length
  5. Oversee composite definition

### **II. Printing Task Group**

**A. Personnel:** Capt Welsh (AF), chief, plus Lon Ruberta (Army) and two MEPCOM representatives.

**B. Tasks:**       General. Provide editorial quality control of tests and related materials, and manage material through the printing process

- Specific.
1. Provide interface with Printing process
  2. Develop answer sheets
  3. Provide quality control of test-related materials
  4. Proofread all tests at Brooks AFB, TX.
  5. Determine printing requirements for experimental booklets and answer sheets
  6. Handcarry materials as required

### III. Reporting Systems Task Group

A. Personnel: Dick Hoshaw, chair, plus each Services' policy rep and Service support

B. Tasks:       General.   Insure personnel system is prepared for new tests

- Specific.
1. Determine required form changes
  2. Determine ARS changes
  3. Determine individual Service changes required in records and computer systems.
  4. Determine that required changes are incorporated into personnel systems

Approved by the Steering Committee:

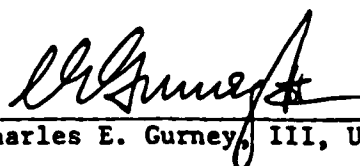
  
Dr. A. J. MARTIN  
ODASD(AR)

MG James G. Boatner, HQ DA  
DAPE-MP

RAdm James R. Hogg, USN  
OP-13

MG Herbert L. Emanuel, USAF  
AFMPP

MG Arthur J. Poillon, USMC  
MC/MP

  
RAdm Charles E. Gurney, III, USN  
MEPCOM

Approved by the Steering Committee:

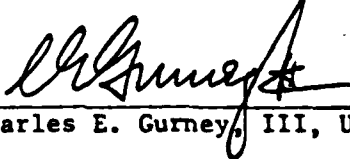
  
Dr. A. J. MARTIN  
ODASD(A)

MG James G. Boatner, HQ DA  
DAPE-MP

  
RAdm James R. Hogg, USN  
OP-15

MG Herbert L. Emanuel, USAF  
AFMPP

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MEPCOM

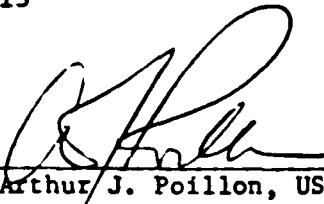
Approved by the Steering Committee:

  
\_\_\_\_\_  
Dr. A. J. MARTIN  
ODASD(A)

\_\_\_\_\_  
MG James G. Boatner, HQ DA  
DAPE-MP

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RAdm James R. Hogg, USN  
OP-13

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AFMPP

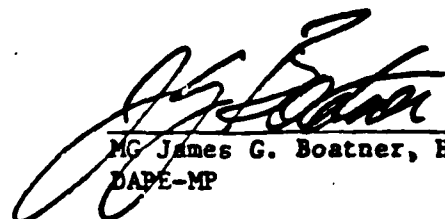
  
\_\_\_\_\_  
MG Arthur J. Poillon, USMC  
MC/MP

\_\_\_\_\_  
RAdm Charles E. Gurney, III, USN  
MEPCOM



Approved by the Steering Committee:

  
Dr. A. J. MARTIN  
ODASD(AR)

  
MG James G. Boatner, HQ DA  
DAPE-MP

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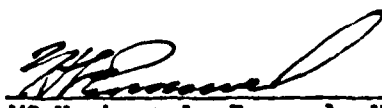
RAdm Charles E. Gurney, III, USN  
MEPCOM

Approved by the Steering Committee:

  
Dr. A. J. MARTIN  
ODASD(AR)

MG James G. Boatner, HQ DA  
DAPE-MP

RAdm James R. Hogg, USN  
OP-13

  
MG Herbert L. Emanuel, USAF  
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MG Arthur J. Poillon, USMC  
MC/MP

RAdm Charles E. Gurney, III, USN  
MEPCOM



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

1 5 OCT 1979

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering  
Committee Meeting

An ASVAB Steering Committee meeting was held on 5 October 1979. The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Director of Accession Policy (OSD), Chairman, and the Directors of Military Personnel Management or equivalent of each Service. The list of attendees and discussion topics are at enclosure 1.

The following areas were discussed with decisions indicated:

a. Implementation of ASVAB 8, 9, and 10.

The Executive Secretary reported that the Working Group had developed a schedule for implementation of forms 8, 9, and 10. The scheduled implementation date is 1 October 1980. The actions required and expected dates of completion are at enclosure 2.

Dr. Martin reviewed steps taken to improve the management of ASVAB: (1) Three task groups (Psychometric, Policy and Reporting Systems, and Printing) were formed within the Working Group to focus on different aspects of developing and implementing new forms. (2) The position of Executive Secretary of the Steering Committee grew out of OSD taking a more active role in the development of ASVAB. The Secretary provides technical support to OSD on ASVAB. This increased managerial control is required to ensure that the new ASVAB tests and the norms are accomplished in a professionally competent manner.

The Marine Corps member stated that we should not miss the scheduled implementation date of 1 October 1980. The MEPCOM member recommended that efforts be made to push up by 30 days the projected dates for completion of testing materials and norms (from 31 May 1980 to 30 April 1980).

The Air Force reported that one test form (8A) and the answer sheets are at the printers and will be ready by 15 November 1979 for the timing and norming studies. The Executive Secretary reported the form currently

being printed (8A) had been reviewed and found to be appropriate for all groups. All test items in the remaining forms are also being reviewed to ensure that they are applicable to minority groups.

Several members asked for a review of the one year delay from the earlier projected implementation date of 1 October 1979. The Executive Secretary reported that the test booklets were almost ready, as originally planned, in October 1979, but an evaluation of steps required to implement new forms in the field showed that about 12 months are needed to revise the reporting systems and to conduct field tests. The committee agreed that the implementation schedule should be continuously reevaluated to ensure that the projected date of 1 October 1980 is met.

MEPCOM recommended that the Working Group look into the possibility of each Service computing its own composites from the subtest standard scores to be provided by MEPCOM. The committee agreed that the Working Group should resolve the computation question. The chairman stated that we must make sure that quality control is fully maintained and that MEPCOM's role of quality assurance should not be lessened in any way.

b. Norming Problem and ASVAB Score Scale.

The current ASVAB norms appear to overestimate the ability of persons in mental categories IIIB and IV. Preliminary results, which include the effects of some test compromise, of the extent of the misnorming are at enclosure 3. In early 1980, additional information on the norming problem will be obtained on a sample of high school students, which should enable improved estimates of the impact of test compromise. Educational Testing Services (ETS) is conducting the study for OSD. A item for the next committee meeting will be the effect of alternative norms on manpower supply.

c. Nationally Representative Sample of 17-21 year olds.

The purpose of this effort would be to determine the ability of the current population as compared to the WW II population. The main question is how to fund the cost of approximately \$600K+. The committee agreed that since ASVAB norms are suspect, this study is mandatory to interpret scores in today's population. OSD will look for funds, and the Services were requested to see to what extent they could fund this effort. At the next meeting, the funding and parameters for this study will be presented for discussion.

d. Norming of ASVAB 8, 9, and 10 in Representative High Schools.

Norms for 11th and 12th grade high school students are required for the high school testing program. The estimated cost is about \$350K. At the next meeting, the relationship between the norms for high schools and the sample of 17-21 year olds will be discussed.

e. Common Composites.

The common composites issue continues to be a matter of concern; however, it does not impact on the implementation of ASVAB 8, 9, and 10. It will be addressed by the Working Group as soon as the critical norming problems are resolved.

f. The committee agreed that the Reporting System Task Group should also address policy issues.

g. MEPCOM proposed that cases of suggested test compromise be resolved through a pseudo AFQT rather than retesting with the regular AFQT. The committee agreed that since more work is required on this subject, it should be reviewed by the ASVAB Working Group.

The Chairman closed the meeting by reiterating the importance of developing the new ASVAB forms in a professional manner. He scheduled the next meeting for 1400 hours, 27 November 1979 with the following tentative agenda:

- Progress report on ASVAB 8, 9, and 10.
- Estimates of the impact of misnorming on manpower supply.
- Design and funding for national representative samples.



Milton Maier, Ph.D.  
Executive Secretary

Enclosures (3)

Approved by the Steering Committee:

A. J. Martin 10/16/79  
Dr. A. J. Martin  
ODASD (AP)

\_\_\_\_\_  
Col. J. T. Weathers  
DAPE-MP

\_\_\_\_\_  
RAdm James R. Hogg, USN  
OP-13

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Col. R. F. Pruitt, USAF  
AFMPP

\_\_\_\_\_  
Col. R. W. Goodale, USMC  
MC/MP

\_\_\_\_\_  
RAdm T. F. Brown III, USN  
MEPCOM



MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

The agenda for the meeting is as follows:

a. Schedule for implementation of ASVAB 8, 9, and 10. An implementation schedule developed by the ASVAB Working Group, together with the Minutes of the Working Group meeting on 13 September 1979 and a progress report on developing the new forms, are attached.

b. Norming Problem and ASVAB Score Scale. A paper entitled "The ASVAB Score Scale" is attached. A report on the results of the AFEES norming study will be presented by the Army Research Institute.

c. Nationally representative Sample.

A paper entitled "Manpower Supply in the Current Population" is attached. This paper presents the rationale for administering the new ASVAB to a representative sample of the civilian population.

d. High School Norming of ASVAB 8, 9, and 10.

The specifications for norming ASVAB 8, 9, and 10 in a representative sample of high school students in grades 11 and 12 is attached.

e. Common Composites.

A list is attached showing the composites each service will use when the new ASVAB is implemented. Further discussions leading toward the next generation of composites will be continued by the ASVAB Working Group.

Incls  
as

MILTON H. MAIER, Ph.D.  
Executive Secretary

EN 1

# ASVAB STEERING COMMITTEE MEETING - 5 OCTOBER 1979

## ATTENDEES

| <u>NAME</u>         | <u>ORGANIZATION</u>      | <u>PHONE</u> |
|---------------------|--------------------------|--------------|
| Dr. Milt Maier      | Army Research Institute* | 697-9271     |
| Dr. A. J. Martin    | OASD (MRA&L)             | 695-5527     |
| Adm J. R. Hogg      | OPNAV (OP-13)            | 694-5571     |
| Adm T. F. Brown III | CDR MEPCOM               | 459-3868 (A) |
| Col. R. W. Goodale  | HQMC (Code MP)           | 694-2074     |
| Col. J. T. Weathers | ODCSPER - DMPM           | 697-0577     |
| Col. R. F. Pruitt   | HQ USAF - MPX            | 697-5222     |
| Col. E. M. Bushong  | HQ MEPCOM                | 459-2366 (A) |
| Col. C. H. Keck     | HQ USAR - MPX            | 695-9855     |
| Mr. L. A. Ruberton  | HQ USA (ODCSPER)         | 695-0836     |
| Mr. C. R. Hoshaw    | OPNAV (135L)             | 694-5511     |
| LTC W. R. Smith     | HQ MEPCOM                | 459-2811 (A) |
| MAJ R. Dzwonkiewicz | HQ MEPCOM                | 459-2210 (A) |
| MAJ C. D. Kuhn      | HQMC (MP1-20)            | 694-4165     |
| MAJ R. R. Harris    | HQMC (MP1-20)            | 694-4165     |
| CPT J. R. Welsh     | HQ USAF - MPCYPT         | 487-3167     |

\*Executive Secretary



# ASVAB 8, 9, 10 IMPLEMENTATION SCHEDULE

|                       |  | Estimated Time for Completion                        |                           |     |     |     |     |     |     |     |     |     |     | 1980 |              |  |
|-----------------------|--|--|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--------------|--|
| ITEM                  |  | OCT  | NOV                       | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |      |              |  |
| FORM 1304             |  | RS   | Printing                  |     |     |     |     |     |     |     |     |     |     |      |              |  |
| FORM 1966             |  | RS   | DoD Forms Group           |     |     |     |     |     |     |     |     |     |     |      |              |  |
| FROM 714              |  | RS   | MEPCOM                    |     |     |     |     |     |     |     |     |     |     |      |              |  |
| ANSWER SHEETS         |  | PRINTING   | +First Delivery           |     |     |     |     |     |     |     |     |     |     |      | To AG Pubs   |  |
| TEST BOOKLETS         |  | PRINTING   | +First Delivery           |     |     |     |     |     |     |     |     |     |     |      | To AG Pubs   |  |
| MANUALS: ADM. SCORING |  | PSY  | Printing                  |     |     |     |     |     |     |     |     |     |     |      |              |  |
| TIMING AND NORMING    |  | PSYCHOMETRIC<br>Timing   Norming   Conversion Tables |                           |     |     |     |     |     |     |     |     |     |     |      |              |  |
| AFES REPORTING SYSTEM |  | RS   | MEPCOM<br>System Revision |     |     |     |     |     |     |     |     |     |     |      | FIELD TRYOUT |  |

RS - Reporting Systems Task Group

Printing -- Printing Task Group

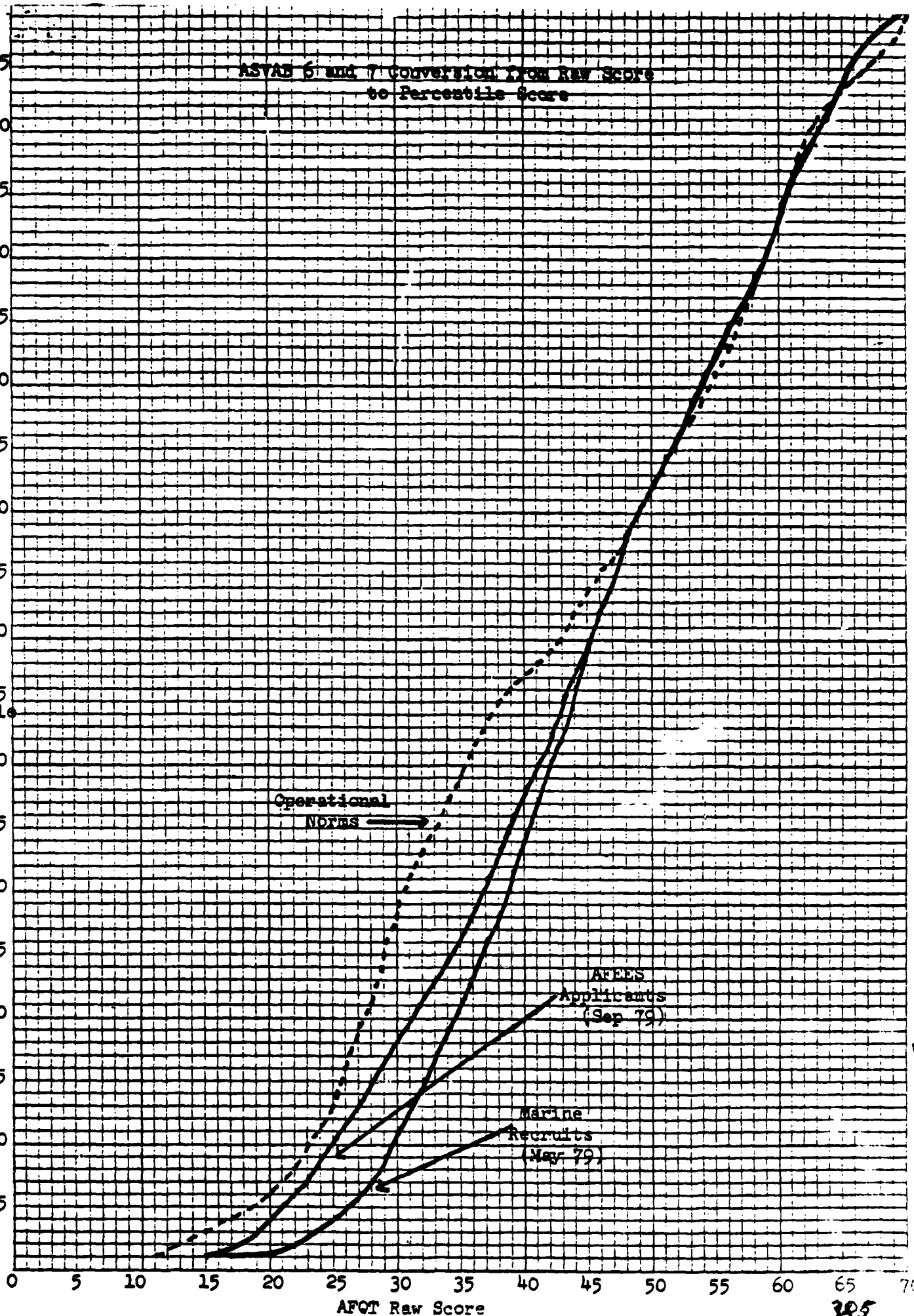
Psychometric - Psychometric Task Group (PSY)

5-6-2 384

# ASVAB 6 and 7 Conversion from Raw Score to Percentile Score

Percentile  
Score

Light and Heavy





OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

7 DEC 1979

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering Committee Meeting

An ASVAB Steering Committee meeting was held on 20 November 1979. The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Director of Accession Policy (OSD), Chairman, the Directors of Military Personnel Management or equivalent of each Service and the MEPCOM commanders.

The following areas were discussed with decisions indicated:

a. Progress report on development of ASVAB 8, 9, and 10. The executive secretary reported that the working group met in early November and that we were on schedule as reported in the last meeting (copy of schedule attached). The timing study was started by the Navy on 19 November and the norming is projected to start in January with completion in May 80. The current enlistment form (#1966) can be used without change, and all other forms that require change are on schedule.

The Air Force reported that \$239,000 was needed for printing all materials for ASVAB 8, 9, and 10. The Service representatives indicated that they did not expect any problem in providing their share.

b. Computation of composites for ASVAB 8, 9, and 10. The executive secretary reported that the working group had reviewed this item and that MEPCOM would continue to compute composite scores. The MEPCOM commander requested that the responsibility for computing composites be reevaluated since the composites are controlled by the Services. The committee agreed that the Policy Task Group review this item and report the pros and cons to the next Steering Committee meeting.

c. Pseudo AFQT to be developed for ASVAB 8, 9, and 10. The Working Group agreed to provide a Pseudo AFQT for use with ASVAB 8, 9, and 10. The MEPCOM commander reported that two systems are now used to detect compromise: one was a composite of subtests that is highly correlated with AFQT (this procedure is used only by the Army), and the second was differences or inconsistencies among subtest scores, especially a high WK score (this procedure is used by MEPCOM). MEPCOM prefers that only one procedure be used,

and would like to see a resolution by 1 January 1980. The MEPCOM commander agreed to present a formal request for one system to OSD after coordination with the Services.

d. Frequency of meetings of ASVAB Working Group. The committee was advised that the working group plans to meet monthly to facilitate implementation of ASVAB 8, 9, and 10. They agreed to the meetings providing travel costs are minimized.

e. Nationally representative sample of 17-21 year olds. The chairman reminded the committee that at the last meeting we agreed that this study was needed and that each Service would look for resources (about \$750K). This amount also includes the high school testing of 11th and 12th graders. He stated that OSD has written to the Department of Labor (DOL) to see if their National Longitudinal Study can be used as the sample for profiling the aptitudes of the current population (letter attached). All Services indicated difficulty in finding FY 80 resources for this project. The committee agreed that the working group plans for norming ASVAB 8, 9, and 10 to the traditional reference population, as planned to support the 1 October 1980 fielding of the new form, should be adhered to independent of the issue of norming to the current population. The committee agreed that it is desirable to be able to interpret ASVAB scores both in terms of the traditional reference population and the current youth population.

f. Progress report on ARI-AFEES norming of ASVAB 6 and 7. The executive secretary reported that preliminary results of this effort are available which depict "order of magnitude" applicant implications (copy attached), but that no precise norms can be prepared because test compromise has affected the results to an unknown degree. Other problems are also still being investigated. Educational Testing Service is calibrating the AFQT tests in high schools by administering the original World War II test, the current operational AFQT from ASVAB 7, the AFQT from ASVAB 8, and AFQT 7A. The combination of studies initiated by OSD will provide an adequate basis to determine the proper norms for ASVAB 6 and 7. No corrective action is possible now because there is no adequate data base to resolve the uncertainties that now exist. Once all the planned studies have been completed, then OSD and the Services will make the policy decisions of how to adjust the norms.

g. ASVAB Executive Agency Responsibility. The chairman raised the issue of future placement of the Executive Agent responsibility and suggested it be considered now that ASVAB 8, 9, and 10 are nearing implementation. The committee agreed (1) to table the question of which Service should function as ASVAB Executive Agent until the next meeting, and (2) that the Executive Secretary should continue to serve in his present capacity.

h. The next meeting is scheduled for 22 January 1980. Agenda will include:

- (1) Progress report by working group on ASVAB 8, 9, and 10.
- (2) Computer Adaptive Testing (CAT) presentation by the Marine Corps.

- (3) Implications of ASVAB norming problem with regard to standards, supply, and trainability.
- (4) Computing composites.
- (5) ASVAB Executive Agent responsibility.

*Milton Maier*  
Milton Maier  
Executive Secretary

Attachments

Approved by the Steering Committee:

*A. J. Martin 12/6/79*  
Dr. A. J. Martin  
ODASD (DP)A

MG J. G. Boatner  
DAPE-MP

RAdm J. R. Hogg, USN  
OP-13

MG W. R. Usher, USAF  
AFMP

COL W. Howland, USMC  
MC/MP

RAdm T. F. Brown III, USN  
MEPCOM

# ASVAB 8, 9, 10 IMPLEMENTATION SCHEDULE

|                       |              | Estimated Time for Completion |                        |     |     |     |     |     |                   |     |     |     |     | 1980         |  |
|-----------------------|--------------|-------------------------------|------------------------|-----|-----|-----|-----|-----|-------------------|-----|-----|-----|-----|--------------|--|
| ITEM                  |              | OCT                           | NOV                    | DEC | JAN | FEB | MAR | APR | MAY               | JUN | JUL | AUG | SEP |              |  |
| FORM 1304             | RS           |                               | Printing               |     |     |     |     |     |                   |     |     |     |     |              |  |
| FORM 1966             | RS           |                               | DoD Forms Group        |     |     |     |     |     |                   |     |     |     |     |              |  |
| FORM 714              | RS           |                               | MEPCOM                 |     |     |     |     |     |                   |     |     |     |     |              |  |
| ANSWER SHEETS         | PRINTING     |                               | First Delivery         |     |     |     |     |     | To AG Pubs        |     |     |     |     |              |  |
| TEST BOOKLETS         | PRINTING     |                               | First Delivery         |     |     |     |     |     | To AG Pubs        |     |     |     |     |              |  |
| MANUALS: ADM. SCORING | PSY          |                               | Printing               |     |     |     |     |     |                   |     |     |     |     |              |  |
| TIMING AND NORMING    | PSYCHOMETRIC |                               | Timing   Norming       |     |     |     |     |     | Conversion Tables |     |     |     |     |              |  |
| AFES REPORTING SYSTEM | RS           |                               | MEPCOM System Revision |     |     |     |     |     |                   |     |     |     |     | FIELD TRYOUT |  |

RS - Reporting Systems Task Group

Printing - Printing Task Group

Psychometric - Psychometric Task Group (PSY)

NOV 13 1979

MRA&L READ  
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1979 MPP (2)

9 NOV 1979

AP PENDING  
A. J. MARTIN/cr/8 Nov 79/55527  
OASD(MRA&L) (MPP) (AP)

Dr. Howard Rosen  
Director, Office of Research  
and Development  
Employment and Training  
Administration  
U.S. Department of Labor  
Washington, D.C. 20213

Dear Dr. Rosen:

The Department of Defense would like to request your help and cooperation in assessing the appropriateness and potential of the 1979 National Longitudinal Survey of Youth as a vehicle through which to develop national norms for the Armed Services Vocational Aptitude Battery (ASVAB). The purposes of this letter are to describe this DoD effort, identify our reasons for exploring this as a joint effort with the 1979 National Longitudinal Survey of Youth and to request points of contact for future interaction.

The ASVAB is a multi-faceted test covering a broad range of skills and aptitudes. It is designed to evaluate general mental ability and mechanical, electronic and clerical/administrative skills. ASVAB tests are used by the military for two purposes. First, they are used as a screening device for general acceptance for service. Second, tests are used for vocational assignment and classification purposes.

Our current objective is to develop a normalization of the newly designed ASVAB which would accurately reflect distributions in the present population. The previous DoD effort in which tests were administered to a large representation population was at the end of the World War II period. The significant demographic, cultural and educational changes since World War II, strongly suggests that a normalization on the current population is timely and imperative if we are to accurately relate our standards and the capabilities of military entrants to the current youth population.

In considering the possible alternatives for an appropriate population which might be used for such a normalization, it is clear that there are two major routes to follow. First, we could initiate a research effort to design and select a representative sample of the current population, and then administer the ASVAB to it together with a questionnaire to collect supplemental data. Alternatively, we could determine the feasibility of



administering the ASVAB to an existing sample whose composition met the requirements of being representative of the 17-21 year old cohort at the present time. The NLS survey sample fits most of the criteria needed for national normalization of the ASVAB.

Our understanding of the sample design for the study indicates that in fact, the 1979 National Longitudinal Survey of Youth made use of three independent probability samples. Two of these samples were designed to cover the non-institutionalized, civilian population in the age range 14-21 (as of January 1, 1979). The third sample was designed specifically to cover the military portion of the 14-21 age cohort, and is the one for which we have assembled a funding consortium.

We are specifically interested in exploring the feasibility of administering the ASVAB to the two samples which cover the non-institutionalized, civilian population; i.e., the "cross sectional" sample representing males and females, with various racial, ethnic, and income groups represented in their proper population proportions and the "supplemental sample" which oversamples Hispanics, Blacks, and economically disadvantaged non-Hispanic and non-blacks.

There would be several benefits to a cooperative effort with the NLS. The major benefit is that the utility of both sets of data (NLS and ASVAB) would each be considerably enhanced by the other. Addition of the ASVAB data to the NLS file would allow analysis of the differential occupational and educational outcomes for youth as a function of various aptitudes. These benefits would accrue to DoI at no cost since the full costs of the ASVAB administration would be borne by DoD. For DoD, addition of the NLS data would allow analysis, by your contractor, of relationships between ASVAB scores and other characteristics.

In sum, we would like the opportunity to explore this option further, both with your office and with the various individuals with primarily research and operational responsibility for the youth survey. I would appreciate your identifying the individuals who should most appropriately be involved in such discussions and contacting us about what might be appropriate next steps.

For the Department of Defense, we would like to designate Dr. A. J. Martin as our official point of contact for coordinating further substantive and administrative discussions on this most important topic. Dr. Martin is the Director of Accession Policy in my office and can be reached at 695-5527.

Sincerely,

(signed) Richard Danzig  
Principal Deputy Assistant Secretary of Defense (MRA&L)

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U.S. DEPARTMENT OF LABOR  
EMPLOYMENT AND TRAINING ADMINISTRATION  
WASHINGTON, D.C. 20213



21 NOV 1979

Honorable Richard Danzig  
Principal Deputy Assistant  
Secretary of Defense (MPS&L)  
Washington, D. C. 20301

Dear Dr. Danzig:

This is in reply to your November 9, 1979, letter asking about the Labor Department's interest in cooperating with the Department of Defense (DOD) to assess the feasibility of administering the Armed Services Vocational Aptitude Battery (ASVAB) to a sample from the 1979 National Longitudinal Surveys of Youth (NLS).

We appreciate the benefits to such a cooperative effort, and have arranged a meeting with Dr. A.J. Martin whom you designated in your letter as the DOD point of contact. Attending this meeting, which will be held December 7, 1979, will be the NLS directors, Dr. Martin, and Ellen Sehgal of my staff.

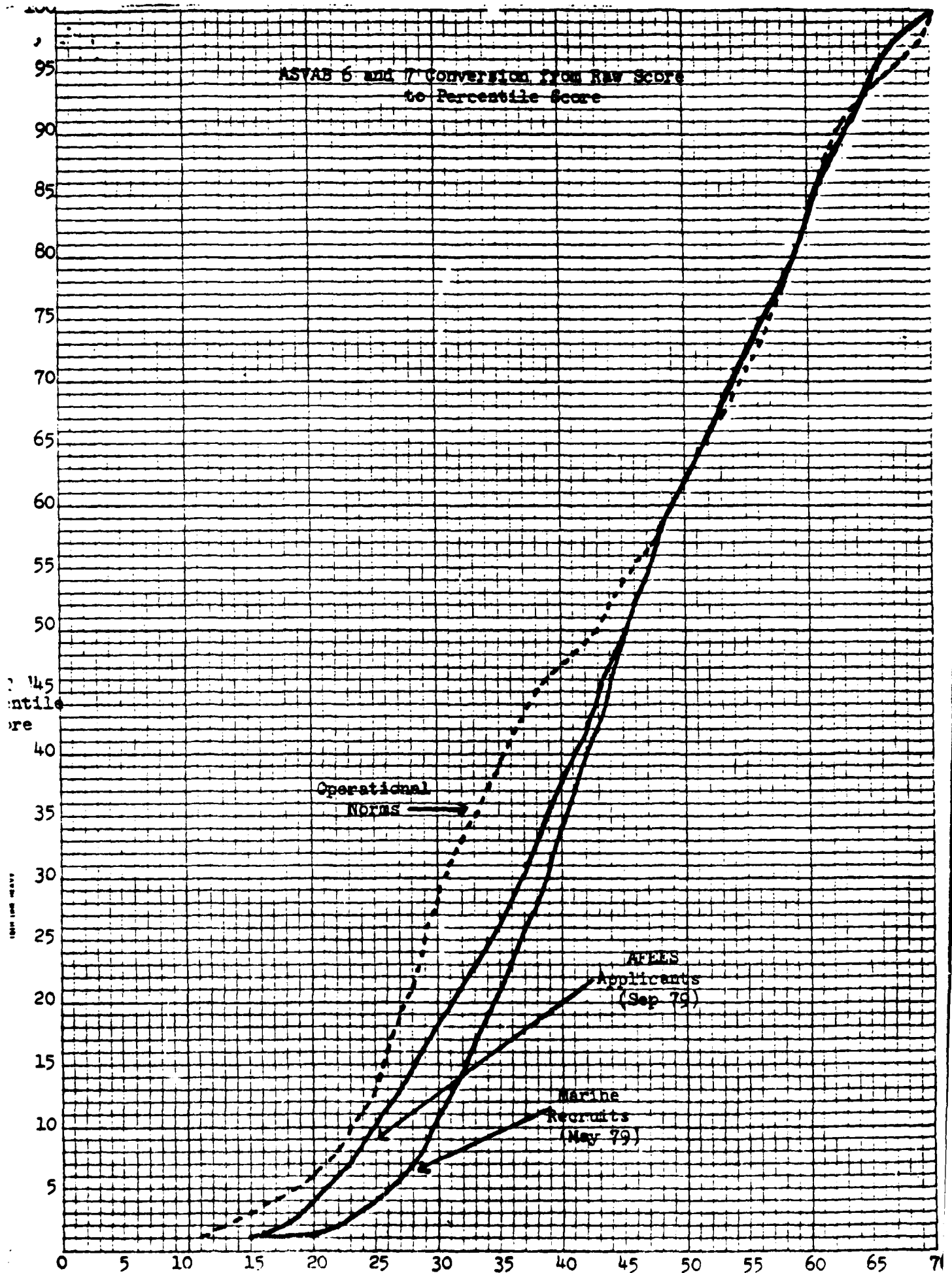
We look forward to working with DOD, and we thank you for your letter.

Sincerely,

HOWARD ROSEN  
Director  
Office of Research and Development

cc: Dr. A.J. Martin

# ASTAB 6 and 7 Conversion from Raw Score to Percentile Score



**Percent of Applicants Qualifying**

**June - July 1979**

**DoD**

|                        |                     | <b>Operational<br/>Norms</b> | <b>ARI-AFEES<br/>Norms</b> |
|------------------------|---------------------|------------------------------|----------------------------|
| <b>Non High School</b> | <b>(N = 50294)</b>  | <b>59</b>                    | <b>42</b>                  |
| <b>HS Graduate</b>     | <b>(N = 63618)</b>  | <b>81</b>                    | <b>70</b>                  |
| <b>Total</b>           | <b>(N = 113912)</b> | <b>72</b>                    | <b>58</b>                  |

**Standards;**

**Appropriate standards have been applied for each service**

Percent of Applicants Qualifying

June - July 1979

Air Force

|                 |             | Operational<br>Norms | ARI-AFEES<br>Norms |
|-----------------|-------------|----------------------|--------------------|
| Non High School | (N = 6369)  | 21                   | 21                 |
| HS Graduate     | (N = 15977) | 66                   | 50                 |
| Total           | (N = 22346) | 53                   | 42                 |

Standards;

HS Graduates AFQT >21 and GT >45 and Sum of Composites >170

Non Graduates AFQT >65 and GT >45 and Sum of Composites >170

Percent of Applicants Qualifying

June - July 1979

Army

|                 |             | Operational<br>Norms | ARI-AFEES<br>Norms |
|-----------------|-------------|----------------------|--------------------|
| Non High School | (N = 28744) | 58                   | 33                 |
| HS Graduate     | (N = 28348) | 84                   | 74                 |
| Total           | (N = 57092) | 71                   | 53                 |

Standards;

HS Graduates AFQT >16 and 1 Aptitude Area Above 90

Non Graduates AFQT >31 and 2 Aptitude Area Above 90

Percent of Applicants Qualifying

June - July 1979

Marine Corps

|                 |             | Operational<br>Norms | ARI-AFEES<br>Norms |
|-----------------|-------------|----------------------|--------------------|
| Non High School | (N = 5115)  | 53                   | 45                 |
| HS Graduate     | (N = 5579)  | 82                   | 73                 |
| Total           | (N = 10694) | 68                   | 59                 |

Standards;

HS Graduates AFQT >21 and GT >80

Non Graduates AFQT >21 and GT >95

Percent of Applicants Qualifying

June - July 1979

Navy

|                 |             | Operational<br>Norms | ARI-AFEES<br>Norms |
|-----------------|-------------|----------------------|--------------------|
| Non High School | (N = 10066) | 90                   | 80                 |
| HS Graduate     | (N = 13714) | 92                   | 84                 |
| Total           | (N = 23780) | 91                   | 82                 |

Standards;

HS Graduates AFQT >21

Non Graduates AFQT >21

No Supplemental Standards





OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

29 JAN 1980

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS  
(Military Personnel Policy)

MEMORANDUM FOR RECORD

SUBJECT: Armed Services Vocational Aptitude Battery (ASVAB) Steering  
Committee Meeting

An ASVAB Steering Committee meeting was held on 22 January 1980. A list of attendees is attached. The committee meets periodically to provide guidance on development and use of the ASVAB.

Members include the Director of Accession Policy (OSD), Chairman, the Directors of Military Personnel Management or equivalent of each Service, and the MEPCOM commander.

The following areas were discussed with decisions indicated:

a. Progress report on implementation of ASVAB 8, 9, and 10. The Executive Secretary reported that all aspects for implementation were on Schedule.

- Norming at the 13 AFES started as planned during week of 14 January.

- Norming at reception Stations also started during the same period for all the Services.

- Norming in high schools by Educational Testing Service started 21 January 1980.

- PERT Chart calls for norming and conversion tables to be completed by 31 May 80. This target is expected to be met unless something drastic and unexpected comes up.

- Printing of materials is also on schedule and should be ready by 31 May 80.

- Materials should be made available to MEPCOM in time for tryout next summer.

- The chairman for the Policy Task Group of the ASVAB Working Group reported that the DD Form 1966 would be ready by 1 October 80, and if there was some delay, the operational testing with the new ASVAB could still start on 1 October 80.

- The chairman of the Steering Committee informed the members that there was pressure from the recruiting services and higher officials in OSD to implement the new ASVAB sooner than 1 October 80. However, with the work that still has to be done, 1 October 80 is the most reasonable date at this time.

b. Computer Adaptive Testing (CAT) presentation by the Navy and Marine Corps. The briefing included a general orientation with target dates for completion as follows:

- |  |       |
|--|-------|
| - Analysis of items and prototype development      | FY 80 |
| - Prototype test and evaluation                    | FY 81 |
| - Operation systems specifications and development | FY 82 |
| - Field Test                                       | FY 82 |
| - Acquisition planning                             | FY 83 |
| - Acquisition and start (fall CY 83)               | FY 84 |

The chairman voiced the concern that the Steering Committee should link up with CAT and document the knowledge and experiences gained with previous fielding of new ASVAB forms. The chairman advised that we must find the best way for the committee to assist in development of CAT. He also expressed concern about problems in implementing such a new, untried system on a DoD-wide basis, especially since we are experiencing such great difficulty in fielding new forms of the paper and pencil ASVAB, for which we have years of experience, and he noted that CAT should benefit from our mistakes on the development of paper and pencil ASVAB forms.

The Navy member suggested that CAT should be brought under the committee when the R&D is finished and plans for implementation are being developed. Navy member also recommended a semi-annual update on progress.

MEPCOM member felt that early FY 84 was good time to start CAT since ASVAB 8, 9, and 10 would have been in use for three years. He also raised serious doubt that MEPCOM could test 30-50,000 applicants on the items being considered for CAT. The technical recommendation by the NPRDC briefers was that the AFEEs had to do this since the applicants who fail to qualify for enlistment must be tested and recruits at reception centers do not include failures.

c. Implications of ASVAB norming problems with regard to standards, supply, and trainability. The Marine Corps and Army (ARI) data evaluation is nearly completed, and they are converging on an agreement as to what the revised norms should be. The ETS work in high schools will provide additional insight. According to the executive secretary, a technical recommendation about correcting the norms can probably be made in spring 1980. The chairman advised the committee that they will approve

the new scoring tables, plus the scoring tables should be reviewed by experts outside of DoD; that information on the norming problem will most likely be included in the OSD manpower overview statement (testimony) to Congress; and that the Services in view of Mr. Pirie's direction at the 27 Nov 1979 briefing on this subject should be reviewing and justifying their mental standards for enlistment.

d. Computing Composites. Chairman of the ASVAB Working Group Policy Task Group reported that the Army, Air Force, and Marines recommended that MEPCOM continue to compute the scores. Navy was neutral. MEPCOM member accepted the findings and advised that they will continue to compute the scores.

e. ASVAB Executive Agent Responsibility. The chairman asked each member for comments on the subject of possible transfer to Army at a convenient point in time.

- Army member stated that Army was willing, and had the capability to accept it provided resources (FY 81 funds and one civilian space) are made available.

- Air Force member stated that he saw no reason to transfer it now. Everything was working OK but a transfer to the Navy could perhaps be effected when CAT is ready for implementation.

- Navy member stated that we were bogged down before, but he was impressed with the current effort; that OSD, through the chairman and the executive secretary, is providing good direction to the ASVAB efforts; and that the Executive Agency should not necessarily be changed now, but could be reconsidered after 8, 9, and 10 are implemented.

- Marine member agreed with Navy.

- MEPCOM member expressed no preference.

f. The committee agreed to continue publishing the agenda for the next meeting and adjust it as needed based upon items submitted by the members. It was agreed that new items would be submitted to the Executive Secretary within two weeks after the last meeting, and that the agenda would be distributed at least two weeks prior to the next meeting.

g. As a special item, the chairman discussed efforts to profile current youth population.

- The sample of 13,000 youth between the ages of 15 and 23, built by the Department of Labor at a cost of about \$2.5 million, will be considered for use.

- DoD cost for administering the new ASVAB to this sample (including 1,000 military) is about \$4 million. The results will be useful both for volunteer and mobilization policy analyses. The funds

must come from FY 80 appropriations. OSD comptroller will determine how to raise the \$4 million and most likely ask the Services to provide the resources. Data collection is projected to begin in Summer 1980 with analyses completed by winter-spring 1981.

- Marine Corps member stated that funds should come from DoD since the Services did not program for this expense.

h. The next meeting is scheduled for Thursday, 6 March 1980. Tentative agenda items are as follows:

- a. Progress report on implementation of ASVAB 8, 9, and 10.
- b. Progress report on status of profiling aptitudes of current youth population, and review of proposal to accomplish this effort.
- c. Progress report on ASVAB norming problem with regards to standards, supply, and trainability.
- d. Priorities for experimental testing with AFEES applicants to include data collection for analyzing CAT items at AFEES.
- e. Preparation of deliberate failure keys for use under mobilization conditions.
- f. Development of additional AFQT's for ASVAB 8, 9, and 10.
- g. MEPCOM report on decline of institutional testing program.

*Milton H. Maier*  
Milton H. Maier  
Executive Secretary

Attachment

Approved by the Steering Committee

*A. J. Martin 1/29/80*  
\_\_\_\_\_  
Dr. A. J. Martin  
ODASD (MP) (AP)

\_\_\_\_\_  
Col. R. F. Pruitt, USAF  
AFMP

*J. T. Weathers*  
\_\_\_\_\_  
Col. J. T. Weathers, USA  
DAPE-MP

\_\_\_\_\_  
RAdm T. F. Brown, III, USN  
MEPCOM

\_\_\_\_\_  
RAdm J. R. Hogg, USN  
OP-19

\_\_\_\_\_  
BG H. S. Aitken, USMC  
MC/MP

List of Attendees  
Meeting of ASVAB Steering Committee  
on  
22 January 1980

Dr. A. J. Martin, OSD  
Col. R. F. Pruitt, USAF  
Col. J. T. Weathers, USA  
RAdm T. F. Brown, III, MEPCOM  
RAdm J. R. Hogg, USN  
BG H. S. Aitken, USMC

LTC R. Williams, USAF  
LTC S. Stephenson, USAF  
Mr. R. Hoshaw, USN  
Dr. M. Wiskopf, USN  
Mr. L. Ruberton, USA  
Maj. R. Harris, USMC  
LTC J. Creel, USMC  
LTC W. Smith, MEPCOM  
Col. E. Bushong, MEPCOM  
Dr. J. McBride, USN

Col. A. Mears, OSD, EO  
Dr. M. Maier, USA